Chapter 3 - Klamath River State Scenic Waterway Management Plan

Chapter 3 – Klamath River above Frain Ranch

Chapter 3 - Oregon Scenic Waterways Klamath River Scenic Waterway Management Plan

Background

The Oregon Scenic Waterways System was created by ballot initiative in 1970. Scenic waterways are defined as including the designated river and related adjacent lands within º mile of the bank on either side of the river. The original Act designated 496 free-flowing miles in six different rivers.

Rivers can be added to the system through ballot initiative, or designation by the legislature or the governor. In 1988, Oregon voters passed a second ballot initiative, the Oregon Rivers Initiative (Ballot Measure #7) that added 573 river miles to the Oregon Scenic Waterways System, including 11 miles of the upper Klamath River. This segment begins at the J.C. Boyle Powerhouse and goes southwest downstream to the Oregon-California state line (see Map 2).

There are now segments of 19 rivers (1,148 river miles) and one lake (Waldo Lake) in the Oregon Scenic Waterways System.

Administration

The Oregon Parks and Recreation Commission administers scenic waterways in accordance with Oregon Revised Statutes 390.805 to 390.925. Oregon Administrative Rules have been adopted to govern the program.

General rules prescribe generic standards that apply to all scenic waterways. Specific rules are also developed for each river during the management planning process. These regulations are designed to manage development within the scenic waterway corridor and maintain the natural beauty of the river.

The *Scenic Waterways Act* and related rules require evaluation of proposed land development, and improvement or alteration relative to the scenic and aesthetic beauty of the waterway, as viewed from the river. This review and evaluation apply to all related adjacent lands within 1/4 mile of the banks of the scenic waterway. Landowners wanting to build houses or roads, cut timber, mine, or pursue other similar projects must make written notification to the Oregon Parks and Recreation Commission. Department staff members review the proposal, in coordination with other jurisdictions, and determine if the proposal will substantially impair the natural beauty of the scenic waterway.

When a project is inconsistent with scenic waterway goals, the Oregon Parks and Recreation Department Commission and staff work with the landowner to resolve conflicts. The commission has one year from the date of initial notification in which to reach accommodation with the landowner.

This may include revising the project, or compensating the landowner by purchasing the land or resource, or negotiating a scenic easement. If satisfactory resolution is not reached within one year, the landowner may proceed with the initial development proposal.

Local and state agencies must comply with the scenic waterway law and rules. Federal land managing agencies are encouraged to coordinate with the Oregon Parks and Recreation Department, to insure that their own land management actions are compatible with scenic waterway prescriptions.

Management Plans

The *Oregon Scenic Waterway Act* describes conditions under which activity can occur within the corridor of a state scenic waterway. The Act specifies that a management plan, in coordination with other state and local agencies, will be developed. The Act specifically describes the management plan as being the administrative rules that are adopted. Within the management plan, scenic waterways are classified into one or more of six possible classifications, according to the character of the landscape, the amount and type of development, and local zoning. River classifications are also based upon access to, and existing development in, the scenic waterway corridor.

In the development of the management plan (administrative rules) for the Klamath River, an eleven step process was followed:

1) Scoping meetings with federal, state and local governments and the public
2) Data collection
3) Corridor description
4) Resource and management analysis
5) Public and agency review of findings
6) Draft management plan
7) Public and agency review of the Draft Management Plan
8) Revisions to the draft management plan
9) Final management plan adopted by the Oregon Parks and Recreation Commission
10) Water Resources Commission concurrence with plan adoption
11) Plan implementation and monitoring

The goal of the Scenic Waterway management planning process is to produce a comprehensive and workable management plan, implementation of which will protect or enhance the special attributes of the designated river corridor.

The intent is to maintain the scenic status quo without turning back the clock on existing land uses. Scenic waterway management plans (administrative rules) are developed to protect or enhance the aesthetic and scenic values of scenic waterways, while allowing compatible agriculture, forestry and other land uses.

The plans are composed of management principles, standards and prescriptions applicable to scenic waterway shorelines and related adjacent lands. The rules establish varying intensities of protection or development based on the special attributes of each river segment. This is done through the use of river classifications.

The administrative rules (management plan) for the Klamath River Scenic Waterway were adopted by the OPRD Commission on September 25, 2002 and became effective on October 3, 2002.

Existing Condition

The Klamath River from the J.C. Boyle Powerhouse to the Oregon-California state line was designated a scenic waterway in 1988. Ownership within this corridor is 75 percent BLM,

23 percent private, and 2 percent State of Oregon (see Map 3). Vehicle access is limited to Topsy Road along the east side of the river and the J.C. Boyle Powerhouse Road on the west side of the river. Both roads are gravel or native surface and provide vehicle access to numerous locations on each side.

Since both roads follow a bench elevated well above the river, the roads are only visible from the river at their river-level access points. Klamath County has zoned the private lands within the scenic waterway corridor as "forestry".

Within this forestry zone landowners may conduct forest operations, develop temporary structures for the purposes of a forestry operation, alter the land for mineral exploration, mining, gravel extraction and processing, and a host of other uses.

To date, uses in the canyon have been primarily recreation, range, and timber management. Few structures exist within view of the river, and timber harvest activities have been limited to selective cutting. Range activities are primarily above the canyon rim with no evidence of activity in view of the river.

Classification for the Klamath River Scenic Waterway

Based on the existing condition, and through public review and comment resulting from the 11-step planning process, the Oregon Parks and Recreation Department has classified the entire 11-mile segment of the Klamath River Scenic Waterway as a Scenic River Area. Scenic River Areas are accessible by roads in places, but which contain related adjacent lands and shorelines still largely primitive and undeveloped except for agriculture and grazing. The management goal of this classification is to preserve the undeveloped character, and to maintain or enhance the high scenic quality, recreation, fish and wildlife values while allowing continued agricultural use.

The rules established for the Klamath River Scenic Waterway generally do not affect development existing at the time of scenic waterway designation. This classification is not designed as an absolute prohibition against new development, though some types of improvements require notification, review, and approval.

Mining, road building, new structures, mobile and manufactured home placement, land clearing and timber harvest typically must go through the notification process. The administrative rules for the Klamath River Scenic Waterway determine what proposals may be approved and how they must be conditioned to protect the natural and scenic beauty of the waterway.

Notification and approval is generally not needed for fences, farm building maintenance, irrigation lines, crop rotation, danger tree removal, residential maintenance and remodeling, home site landscaping, minor road maintenance, and firewood cutting.

However, landowners are advised to contact Oregon Parks and Recreation Department before making any changes to their land within a scenic waterway corridor, especially if it is visible from the river.

Land Management Rules for the Klamath River Scenic Waterway

Following are the Administrative Rules (management plan) specific to the Klamath River Scenic Waterway:

OAR 736-040-0053
Klamath River Scenic Waterway
(1)Scenic River Area:

(a) That segment of scenic waterway beginning at the J.C. Boyle Dam Powerhouse to the California border (11 miles) is classified as a Scenic River Area.

(b) This Scenic River Area shall be administered consistent with the standards set by Oregon Administrative Rules 736-040-0035 and Oregon Administrative Rules 736-040-0040(1)(b)(B). In addition to these standards, all new development in resource zones (i.e., forest-related dwellings) shall comply with Klamath County land use regulations.

(c) New structures and associated improvements shall be totally screened from view from the river by topography and/or vegetation, except as provided under Oregon Administrative Rules 736-040-0030(5), and except those minimal facilities needed for public outdoor recreation or resource protection.

If inadequate topographic or vegetative screening exists on the site, the structure or improvement may be permitted if native vegetation can be established to provide total screening of the proposed structure or improvement within a reasonable time (4-5 years).

The condition of "total screening," as used in this rule, shall consist of adequate topography and/or density and mixture of native evergreen and deciduous vegetation to totally (100 percent) obscure the improvement.

(d) Commercial public service facilities, including resorts, motels, lodges, and trailer parks that are visible from the river shall not be permitted.

(e) New mining operations, except recreational placer mining and recreational prospecting, as those terms are defined and used in Oregon Revised Statutes 390.835, and similar improvements, shall be permitted only when they are totally screened from view from the river by topography and/or vegetation.

The condition of "total screening," as used in this rule, shall consist of adequate topography and/or density and mixture of native evergreen and deciduous vegetation to totally (100 percent) obscure the new mining operation.

If inadequate topographic or vegetative screening exists to totally screen the proposed mining site, the mining operation may be permitted if native vegetation can be established to provide total screening of the proposed mining site within a reasonable time (4-5 years).

(f) New roads may be permitted only when totally screened from view from the river by topography and/or vegetation. The condition of "total screening," as used in this rule, shall consist of adequate topography and/or density and mixture of native evergreen and deciduous vegetation to totally (100 percent) obscure the new road.

If inadequate topographic or vegetative screening exists to totally screen the proposed road, the road may be permitted if acceptable topography can be created, or road design

techniques used, to totally (100 percent) screen the road at the time of construction or native vegetation can be established to provide total screening of the proposed road within a reasonable time (4-5 years).

(g) Where existing roads are visible from the river, major extensions, realignments, or upgrades to existing roads shall be totally screened from view from the river.

The condition of "total screening," as used in this rule, shall consist of adequate topography and/or density and mixture of native evergreen and deciduous vegetation to totally (100 percent) obscure the subject improvement. Necessary minor road improvements shall be substantially screened from view from the river.

The condition of "substantial screening," as used in this rule, shall consist of adequate topography and/or density and mixture of native, evergreen and deciduous vegetation to substantially obscure (at least 75 percent) the minor road improvement.

If inadequate topography or vegetation exists to substantially screen the road improvement, it may be permitted if acceptable topography can be created, or road design techniques used, to substantially screen the road at the time of construction; or native vegetation can be established to provide substantial screening of the road improvement within a reasonable time (4-5 years).

When an existing road is re-graded, no side cast into or visible from the river shall be permitted. Excess material shall be hauled to locations out of view from the river and placed in a manner that the excess material will not reach the waters of the scenic waterway due to wind, water or other means of erosion or transport.

(h) Visible tree harvest or other vegetation management may be permitted provided that:

(A) The operation complies with relevant Forest Practices Act rules;

(B) Harvest and management methods with low visual impact are used; and,

(C) Harvest or vegetation management is designed to enhance the scenic view within a reasonable time (5-10 years). Within this paragraph, "enhance" means to benefit forest ecosystem function and vegetative health by optimizing forest stand densities and vegetative composition, fostering forest landscape diversity and promoting sustainable forest values.

(i) Improvements needed for public recreation use or resource protection may be visible from the river, but shall be primitive in character and designed to blend with the natural character of the landscape.

(j) Proposed utility facilities shall share existing utility corridors, minimize any ground and vegetation disturbance, and employ non-visible alternatives when reasonably possible.

(k) Whenever standards of Oregon Administrative Rules 736-040-0035 and 736-040-0053 section (1), subsections (b) through (j) are more restrictive than Klamath County's land use and development ordinances, scenic waterway regulations shall apply.

Chapter 4 - Resource Goals, Issues and Alternatives

Chapter 4 – Rafting the Klamath River

Chapter 4 - Resource Goals, Issues and Alternatives

Introduction

In order to develop the alternatives described in this DEIS, the interdisciplinary team used their past experience and considered existing management direction and resource conditions to develop an image of what the resource should look like in the future. This desired future condition was used to define resource goals, which are listed below for each resource. In addition, public comments were summarized into issue statements and combined with management concerns to help in the development of alternatives.

Issues related to resource management are also listed below for each resource. Appendix G (Public Issue Statement Tracking), displays how individual public comments are addressed in this document. A list of possible management actions was then developed that could help to guide realization of those future conditions.

Various management actions were added into alternatives based on the theme of each particular alternative. There is substantial overlap of management actions between alternatives. Implementation of any alternative would help achieve the listed goals, but to varying levels and over varying timelines.

Alternatives and Actions Considered but Eliminated from Detailed Analysis

No Management Alternative

During development of this DEIS, Klamath Falls and Redding Field Office personnel met with residents and landowners in the Copco area, California, to discuss the planning effort and describe alternatives proposed by the interdisciplinary team. It was suggested that BLM should consider a "no management" alternative that did not include any activities by the BLM within the canyon. However, an alternative that did not include any management actions whatsoever could be in violation of law and policy for protecting resources within the river canyon. Some of the same people who suggested this "no management" alternative, mentioned after the meeting that some actions in the proposed alternatives might be beneficial, but they just were not comfortable with *all* the actions proposed. The public comment period on the DEIS allows the public to study each alternative closely, and make specific suggestions for changes. Therefore, the planning team will be able to address comments from the public about changes to any alternatives, including removal of some actions proposed for any alternative, during preparation of the Final EIS.

Expanded Planning Boundary Alternative and Actions

At least one public comment suggested that the planning area boundary extend north of Highway 66 to include the Klamath River up to Keno dam. There are no BLM lands along this section of river so the northern boundary was set at Topsy Reservoir.

Some specific actions such as preventing development, or eliminating existing uses on lands far beyond the rim of the river canyon were suggested in public scoping comments. The planning team determined that the scope of the plan should include the river canyon and access to the canyon, but not go beyond that.

Other Actions not Analyzed

Although the issues inherent to the following actions were addressed, the specific actions listed were not analyzed.

- OHV use should be strictly banned within the canyon area due to its destructive nature and abuse to house pits and ceremonial areas.
- No OHV recreation should be allowed in the canyon, or maybe allow OHV recreation if a permit process to restrict use was established.
- At a minimum the Topsy road should be gated and closed in winter and during wet weather.
- Plant poison oak around the Rain Rock to help prevent vandalism.

Connected Actions

The Council on Environmental Quality Regulations for implementing NEPA stipulate that "Connected Actions" need to be analyzed. Connected Actions are those that:

- would automatically trigger other actions
- cannot or will not proceed unless other actions are taken perviously or simultaneously
- are interdependent parts of a larger aciton and depend on the larger action for their justification.

An example of this is if a new campground is proposed, a connected action might be that a new permanent access road is also needed. In this EIS the interdisciplinary team listed the actions, including all know connected actions, in the detailed description of alternatives. Therefore, each alternative does not have a separate *"connected actions"* section.

Overview of the Proposed Alternatives

Alternative 1-No Action (Existing Management)

This alternative is considered the "no action" alternative, because it would not change any direction that is currently in the Klamath Falls or the Redding Resource Management Plans.

Management would continue to follow direction in existing plans. Values "shall be preserved in free-flowing condition, and … they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations" (Section 1[b], *Wild and Scenic River Act*).

The goal of this alternative would be to maintain the existing wild and scenic river (scenic classification) outstandingly remarkable values and ACEC values. See Map 9 for the project area boundary for Alternative 1.

Alternative 2- Improvement of Resources and Opportunities

This alternative was developed in response to direction in the *Wild and Scenic Rivers Act* to maintain and enhance scenic river outstandingly remarkable values. The Act states, "Each component of the National Wild and Scenic Rivers System shall be administered in such a manner as to protect and enhance the values which caused it to be included, without … limiting other uses that do not substantially interfere with public use and enjoyment of these values."

The goal of this alternative therefore, would be not just to maintain, but to enhance where possible, the outstandingly remarkable values, while resolving resource management conflicts that could occur. See Map 10 for the project area boundary for Alternative 2.

Alternative 3 - Natural Resource Enhancement/ Restoration (Preferred Alternative)

This alternative emphasizes enhancement of resource values for which the river was designated a Scenic river and an ACEC. The goal of this alternative is to maintain all outstandingly remarkable values, while placing emphasis on restoration and enhancement of the values related to natural resources. Proposed actions are designed to achieve this goal and not create any significant resource management conflicts with other outstandingly remarkable values. See Map 11 for the project area boundary for Alternative 3. For this DEIS, Alternative 3 has been adentified as the "Preferred" Alternative.

Alternative 4 - Expand Human Use Opportunities

This alternative has a greater recreation emphasis. The goal of this alternative is to maintain and enhance all outstandingly remarkable values, while implementing management actions that contribute to enhanced human use of the river corridor. This alternative should emphasize utilizing resources for recreation, including interpreting wildlife and cultural resources, but should not create significant conflicts with managing other values. See Map 12 for the project area boundary for Alternative 4.

Detailed Description of Alternatives

The following description of alternatives is organized by resource topics, to allow easy comparison of how each resource will be managed without having to flip between numerous sections.

During scoping, there were some issues that appeared to be of greater interest to the majority of people than other issues. The listing of issues is organized in this relative order of interest format.

The following section is also formatted in relative order of the interest expressed during scoping. To facilitate understanding of the proposed actions for each alternative, summary tables are provided for each major resource topic. Reviewers should also refer to Appendix H, Proposed Management Actions, for specific management actions and projects listed by resource topic.

Scenic Quality

Resource Goals

- The natural landscape diversity is maintained.
- Mature, old growth, multi-layered canopy structure is maintained in forested areas.
- Plant communities are maintained in a healthy condition.
- More arid areas are maintained with reduced or eliminated noxious weed areas, especially in more arid areas
- long-term scenic quality objectives are met with the use prescribed fire and other vegetation treatments to reduce the likelihood of catastrophic fire.
- Scenic quality is enhanced in areas that contain existing hydropower facilities, through the FERC relicensing process

Summary of Issues

Scenic quality is one of the outstandingly remarkable values identified for the planning area. The consideration of new recreational facilities, fuel loading, prescribed fire, utility development, and roads, could impact visual resources. A computerized viewshed analysis was completed (BLM 2002) to help determine if proposed resource management projects could impact scenery. These impacts are discussed thoroughly in Chapter 5 (Environmental Consequences) of this DEIS. Maintaining, enhancing, or restoring scenic qualities is a management concern.

Actions Common to All Alternatives

- Scenic quality and scenic views would be improved through priority targeted vegetative treatments and plantings around recreation sites and creation of scenic overlooks
- The BLM would cooperate with Oregon States Parks and Recreation Department on management of scenic resources within the State Scenic Waterway
- The BLM would cooperate with PacifiCorp and other private landowners to minimize the visual effects of their management activities and structures, and modify existing structures and projects to lessen negative visual effects
- Vegetation treatment projects would be designed to reduce opportunities for catastrophic wildfire (long- term) while allowing acceptable short-term (5-10 year) visual resource impacts
- Facilities, roads, trails, and activities would be managed to maintain VRM Class II objectives
- River flows that improve the scenic quality would be pursued

Actions Specific to Each Alternative

(Refer to Maps 13, 14, 15, 16, and Table 4-1 and Appendix H)

Table 4-1.— Scenery Management Actions by Alternative

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Visual Resource Management (VRM) Class (acres) (BLM Lands Only)	**VRM Class II**	**VRM Class II**	**VRM Class II**	**VRM Class II**
Sightseeing / visual resource management and enhancement	Design vegetation treatment projects to reduce risk of catastrophic wildfire (long term) while allowing acceptable short-term visual resource impacts	Require vegetative screening and other measures to mitigate hydroelectric project facilities scenic degradation; design vegetation treatment projects to reduce risk of catastrophic wildfire (long term) while allowing acceptable short-term visual resource impacts	Require vegetative screening and other measures to mitigate hydroelectric project facilities scenic degradation; design vegetation treatment projects to reduce risk of catastrophic wildfire (long term) while allowing acceptable short-term visual resource impacts	Require vegetative screening and other measures to mitigate hydroelectric project facilities scenic degradation; design vegetation treatment projects to reduce risk of catastrophic wildfire (long term) while allowing acceptable short-term visual resource impacts; enhance views through targeted vegetative manipulation (thinning and plantings)

Alternative 1

Management of scenic quality and visual resources would be done primarily on a project-by-project basis through project planning and the NEPA process (see Table 4-1).

Fuel treatments to protect scenic values would be focused around recreation sites.

Alternative 2

Management activities would be undertaken only if/when scenic quality/visual resources can be maintained or enhanced (see Table 4-1).

Vegetation treatments would be undertaken specifically to mitigate past damage to scenic quality and to maintain and protect existing values.

Fuel treatments to protect scenic values would be increased to reduce the potential for destructive wildfire.

Alternative 3

Scenic quality/visual resources would be managed through projects that restore and improve damage caused to this resource by past human activity (see Table 4-1).

Vegetation treatments would be aggressively pursued to restore and improve scenic quality/visual resources on public and private lands in the planning area.

Fuel treatments would be implemented to protect scenic values using prescribed fire as the primary method**.**

Alternative 4

Visual and scenic resources would be maintained and enhanced through careful planning of all developments, using landscape architecture and design to blend projects with the existing visual/scenic resource (see Table 4-1).

Projects to improve visual/scenic resources would be undertaken from key observation areas that draw the greatest human use.

Fuel treatments would be concentrated around recreation facilities, trails, and roads.

Recreation

Resource Goals

- A wide variety of recreational opportunities, such as hunting, fishing, camping, whitewater boating, mountain biking, OHV driving for sightseeing, hiking, and picnicking are provided in the upper Klamath River canyon.

- Water quality in the river to allows a safer, higher quality experience for water contact recreation, primarily swimming and whitewater boating. River flows provide as much boating opportunity as possible, while still maintaining or enhancing other resource values.

- The KFRMP/FEIS semi-primitive motorized recreation objective is accomplished by maintaining recreation facilities, roads, and trails for most recreational uses.

- A spectrum of camping opportunities is available for the public from full-service, developed campgrounds near the planning area to primitive dispersed camping.

- Facilities are universally accessible to the greatest extent possible.

- Visual/scenic resources are maintained or enhanced without degrading other resource values.

- Fishing opportunities for trout are maintained or enhanced.

- Roads and motorized use are managed to provide safe, reliable access by either two-wheel drive high-clearance or four-wheel drive vehicles to the most commonly used locations.

- Commercial rafting and rafting use levels are managed to provide a safe, high quality experience while not significantly impacting other recreational users or resource values.

- Coordination with PacifiCorp and interested user groups, such as commercial outfitters, provides for effective recreation management.

Summary of Issues

A primary recreational use is whitewater rafting below the John C. Boyle Powerhouse. Whitewater rafting opportunities are dependent upon the timing and amount of river flow released by PacifiCorp. If the timing or amount of river flow is changed significantly, traditional whitewater rafting could be jeopardized. Recreation use has been identified as an outstandingly remarkable value.

A diversity of recreational activities should be provided (both on/off river) and include routes managed for driving for pleasure. Increased recreation use could also increase the number of access points to the river, causing damage to riparian and upland habitat and significant cultural sites.

If there are no controls on visitor use levels, the quality of the recreation experience could be negatively impacted. Because commercial rafting is a dominant use and occurs in a very pronounced peak use pattern, this activity should be carefully managed. Visitor use levels for other recreation should also be monitored and managed, when necessary, to maintain the quality of recreation experiences, to protect other resource values, to minimize conflicts between various recreational user groups, and to maintain public health and safety. This plan will evaluate the need for limits to visitor use, and apply them where necessary, in order to maintain or enhance the Outstandingly Remarkable Values of the Wild & Scenic river designation.

Vandalism of recreational structures is increasing, and visitor use is damaging vegetation. Concerns have been raised about indiscriminant shooting and target practice that may endanger other recreationists.

Actions Common to All Alternatives

- Manage all segments of the river for nonmotorized boating/watercraft, except for Alternative 4, where consideration would be given for motorized boating in Segment 3 near Copco Reservoir.

- Partner with landowners and stakeholders to maintain the Topsy, Frain Ranch, and Stateline Roads to reduce vehicle damage to natural resources

- Manage OHV use and rehabilitate areas damaged by OHVs. OHVs would be limited to designated roads. No OHV play areas would be provided within the planning area. Other nearby areas may be developed to meet existing OHV trail demand..

- Monitor dispersed camping and picnicking areas to determine if additional facility development or management actions are needed to reduce resource impacts.

- Provide "assurance signing" along major travel routes and major intersections.

- Construct river-scouting trails (for safety) at Caldera Rapid and Hells Corner Rapid.

- BLM will use the minimum necessary tool to manage recreational activity. Regulations, visitor use limits, signage, areas closed to visitation, and other measures, will be undertaken only as necessary. This management approach most closely matches the management goals for the semi- primitive motorized Recreation Opportunity Spectrum classification of the planning area.

- The use limits proposed for commercial rafting under the various alternatives are based on the professional judgment of the BLM recreation staff and observations of historical use patterns. The proposed limits attempt to balance the needs to provide the public with outfitting services and recreational opportunities, protect resource values, and minimize congestion and the potential for user conflicts. The limits also intend to maintain attributes of the recreation experience such as the opportunity to experience solitude and observe wildlife.

Actions Specific to Each Alternative

(Refer to Maps 13, 14, 15, 16, and Tables 4-2, 4-3 and Appendix H)

The roads and access section more thoroughly discusses roads by each alternative. For the convenience of the reviewer, there is discussion of roads in this section to emphasize concerns with recreation management.

Alternative 1

Under this alternative, the project area would be managed primarily for dispersed recreation in a semi-primitive motorized setting. BLM would continue existing agreements with landowners and other agencies. Recreation use levels continue to be light most of the year, with moderate use during the summer months, and more concentrated use occurring on some summer weekends at select recreation sites (see Map 13).

Off-highway vehicle use would be allowed on designated roads and trails. Topsy Road would be nominated for designation to the National Back Country Byway system. Topsy road would also be designated and signed as a motorized vehicle tour route (Table 4-2).

Recreation use levels are limited partially by the basic sites and facilities, by the difficult, slow vehicle travel conditions on roads in the planning area, and by some limits on commercial use established under BLM Special Recreation Permits for rafting and fishing. The overall daily limit on commercial rafting, established in the 1983 Recreation Area Management Plan (RAMP), of 200 passengers and/or 10 commercial trips, has historically been met or exceeded on 0-5 days per season. These peak days generally fall on weekend days in the July-August period. This use limit was established to minimize social conflicts such as congestion at access points, vehicle traffic near residences and villages, and crowding on the river leading to unsafe conditions. Impacts to natural resources from whitewater boating were not considered to be a determining factor in setting the 1983 use limits (BLM 1983). The physical recreation carrying capacity under current management did not account for other recreational uses.

Table 4-2. —Motorized and nonmotorized recreation trails by alternative (miles)

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Nonmotorized trails construction (hiking, mountain biking, and horseback riding) and administrative road closures.				
Segment 1	0.00	5.0	2.0	8.0
Segment 2	18.0	15.0	8.0	15.0
Segment 3	0.2	9.5	6.4	8.2
Total	**18.2**	**29.5**	**16.4**	**31.2**
Off-highway vehicle motorized routes[1] (designated all-terrain vehicle, trail bike, four-wheel drive routes)	22	44	22	50 [2]

[1] Includes 9 miles of Topsy Road outside planning area, all alternatives.
[2] Includes 1 new off-highway vehicle route bridge.

Recreation use and law enforcement patrols would continue to be sporadic and limited during the off-season. "No Shooting" visitor safety zones would be posted around the Klamath River and Topsy Campgrounds.

Recreation sites, trails, and other facilities are few in number, have no user fees (outside of Topsy Campground), and are intended to support the public seeking recreational opportunities in the canyon, rather than serve as attractions or destinations. The Stateline Recreation Site would be developed to better accommodate rafting take-out and protect cultural resources (see Table 4-3 and Map 13).

An 18 mile trail has been planned under this alternative, but designs and surveys have not been developed.

The BLM would work with partners to do minimal road maintenance.

The BLM water right claim for river flows sufficient to maintain both whitewater rafting and fishing recreational use would be pursued, similar to the flows occurring at the time of designation.

Alternative 2

Under this alternative, the project area would be managed primarily for dispersed recreation in a semi-primitive motorized setting. Recreational resources would be managed to improve the quality of visitor experience, while also protecting other resource values. Management would include an increase in the number and standard of developed sites and trails while still allowing dispersed recreation (see Map 14).

Recreation use levels would be managed by limiting the total number of developed sites and by restricting OHV use to designated routes to balance between opportunity, resource protection, and maintenance of a high quality recreation experience (Table 4-2).

The physical recreation carrying capacity of the planning area would increase slightly under this alternative due to the development of new recreation sites. The limits to commercial rafting proposed under this alternative would allow for moderate increases from current use levels. Based on recreation use patterns, the amount of recreation facilities and developments proposed, and limits imposed on commercial rafting use, the carrying capacity is set at 500 visitors per day maximum. The alternative would encourage expanded agreements with landowners and other agencies to allow a moderate increase in use levels.

Recreational facilities would be maintained, improved, or relocated, and otherwise managed as needed to enhance the recreational experience and minimize resource conflicts.

A river hiking trail would be constructed that traverses the planning area. Additional potential trail segments (outside the planning area) would link the community of Copco, California, with Keno, Oregon (including the Keno reach). These new trail segments would be designated to join with a potential trail that would connect to Klamath Falls and the Link River (see Table 4-3 and Map 14). Non-motorized bridge would be constructed below the Klamath River campground.

Roads and trails would be maintained, closed, constructed, etc., to improve recreational opportunities and maintain or enhance other resource values. Motorized vehicle tour routes would be designated and signed. Topsy Road would be nominated for designation to the National Back Country Byway system and National Historic Trail system. OHV travel would be limited to designated roads, both on BLM land and private land, to reduce damage to cultural sites and other resources.

To reduce vandalism, law enforcement patrols would be increased through budget allocations or cooperative agreements. Target shooting and varmint hunting would be restricted from mid-May to mid-September, from the Frain Ranch area to J.C. Boyle Dam. “No Shooting” visitor safety zones would be posted around all recreation sites and use areas in all segments.

Water flows that provide for mid-morning launches would be pursued to enhance whitewater rafting, and at flows that are less damaging to streamside vegetation and habitat to enhance fishing opportunities.

Alternative 3

Recreation facilities, access roads, and commercial outfitting are actively managed to protect other resource values and to provide the opportunity for more solitude and a less developed setting. Some recreation developments will be closed or relocated if necessary to protect other resource values, although this may result in the recreation opportunity being diminished (see Map 15).

A reduction in motorized use would be promoted by reducing the number of designated access/travel routes in the planning area, to protect other resource values. The BLM would work with OHV groups to develop education and outreach programs that address unauthorized OHV use in sensitive areas, such as wetlands and riparian areas (Table 4-2).

The BLM would pursue an agreement for public winter seasonal (mid November to mid April) closure of the access road to Frain Ranch, to protect cultural sites and reduce/eliminate indiscriminate OHV travel. Topsy Road would be nominated for designation to the National Back Country Byway system. Topsy road would also be designated and signed as a motorized vehicle tour route.

Overall recreation visitation levels are expected to remain at or near current levels. The limits to commercial rafting that are proposed under this alternative are established to manage use levels to remain near current levels while still allowing the opportunity for some increase in commercial rafting use. The overall limits on the number of passengers per day (see Appendix H) provide a ceiling to safeguard against the potential for overuse or sudden increases in commercial rafting, and the associated potential impacts, issues, and problems.

Based on recreation use patterns, the amount of recreation facilities and developments proposed, and limits imposed on commercial rafting use, the carrying capacity limit is set at 400 visitors per day maximum.

Sixteen miles of nonmotorized trails would be developed to provide for more semi-primitive backcountry experiences (see Table 4-3 and Map 15).

Law enforcement patrols would remain about the same as current levels with the intent to make management control less obvious. Target shooting and varmint hunting would be restricted from mid-May to mid-September, from the Frain Ranch area to J.C. Boyle Dam. "No Shooting" visitor safety zones would be posted around all recreation sites and use areas in all segments.

Pursuit of river flows for recreation use would be de-emphasized to favor flows that are most conducive to fish habitat improvement and restoration of the river channel.

Alternative 4

Under this alternative, most recreation use would be concentrated on roads and trails on the river, and at developed sites, to minimize impacts to other resources. Facilities, trails, and interpretive materials would be the primary attraction for many visitors. Management objectives would include a change to a more developed setting (roaded natural recreation opportunity spectrum class), which would allow for visitor use levels significantly higher than have existed historically. Based on recreation use patterns, the amount of recreation facilities and developments proposed, and limits imposed on commercial rafting use, the carrying capacity limit is set at 1000 visitors per day maximum.

Agreements with landowners/agencies would be expanded to manage these higher use levels.

Roads and trails would be maintained or improved to allow easy access by all types of vehicles and to attract more casual visits by passing motorists. The BLM would work with OHV groups to develop education and outreach programs that address unauthorized OHV use and OHV use in sensitive areas such as wetlands and riparian area (Table 4-3).

Motorized vehicle tour routes would be designated and signed. Topsy Road would be nominated for designation to the National Back Country Byway system and National Historic Trail system. OHV travel would be limited to designated roads both on BLM land and private land to reduce damage to cultural sites and other resources (see Table 4-3 and Map 16). Motorized bridges are proposed in River Segments 1 and 2.

Recreation patrols and law enforcement activities would be increased, to better manage the expected increase in visitors. The BLM would request increased funding and pursue cooperative agreements to expand these patrols, and station a law enforcement officer in the canyon (for example in the Frain Ranch area) during the high-use summer season.

Target shooting and varmint hunting would be restricted from mid-May to mid-September, from the Frain Ranch area to J.C. Boyle Dam. "No Shooting" visitor safety zones would be posted around all recreation sites and concentrated use areas in all segments.

Additional recreation facilities would be built and managed to support heavy use by a wide variety of users. Land acquisitions are considered to maximize recreation use opportunities (see Map 16).

A river hiking trail would be constructed from the Link River along the Keno Reach, with an intertie to the Pacific Crest Trail in the Cascade-Siskiyou National Monument. Dispersed recreation opportunities would be reduced or displaced because of an increase in emphasis on developed sites.

Efforts would be made to secure sufficient water flows needed to optimize whitewater rafting opportunities.

Table 4-3.— Recreation actions summary by alternative

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Developed campgrounds (picnic tables, toilet, fire grates, garbage pick-up)	1 campground – Topsy (BLM) (15 campsites)	2 campgrounds – Topsy (BLM), Shovel Creek (PacifiCorp) (20–25 campsites)	1 campground– Topsy (BLM) (15 campsites)	5 campgrounds– Topsy (BLM), Turtle (BLM), Klamath River (BLM), Lower Frain (PacifiCorp), Shovel Creek (PacifiCorp) -- (41–52 campsites)
Designated dispersed campsites (picnic table and fire grate)	4 camps (11–14 sites)	5 camps (15–20 sites)	5 camps (11–13 sites)	9 camps (22–32 sites)
Developed day use sites (parking, picnic table, toilet, trail access, boat ramp, etc.)	8 sites	17 sites	6 sites	18–21 sites
Bridges (Repair, or replacement at previous locations)	No Changes proposed	2 Bridges (J.C. Boyle Dam and Klamath River Campground)	No changes proposed	2 Bridges (J.C. Boyle Dam and Klamath River Campground)
Interpretation/environmental education	Develop interpretive brochure for Topsy Road and off-highway vehicle tour opportunities	Develop interpretive brochure for Topsy Road and off-highway vehicle tour opportunities	Develop interpretive brochure for Topsy Road and off-highway vehicle tour opportunities	Develop interpretive brochure for Topsy Road and off-highway vehicle tour opportunities
Firearm use restrictions	No restrictions (except posted "No Shooting" signs around Klamath River Campground)	Restrict target shooting/varmint hunting with firearms from mid-May to mid-September from Frain Ranch to J.C. Boyle Dam; post "No Shooting" signs around all camping sites and visitor use areas, all segments	Restrict target shooting/varmint hunting with firearms from mid-May to mid-September from Frain Ranch to J.C. Boyle Dam; post "No Shooting" signs around all camping sites and visitor use areas, all segments Recommend to ODFW to allow hunting in scenic river corridor only for managing wildlife populations (regulated hunts)	Restrict target shooting/varmint hunting with firearms from mid-May to mid-September from Frain Ranch to J.C. Boyle Dam; post "No Shooting" signs around all camping sites and visitor use areas, all segments Increase law enforcement patrols to manage increased visitor numbers
Private whitewater boating	Private trips limited to 50 users/day (permit system may be implemented if exceeded)	Private trips limited to 50 users/day defined thresholds; includes Bypass reach	Private trips limited to 50 users/day day with defined thresholds. Require float permit with educational materials	Allow up to 100 private users/day with defined thresholds; includes Bypass reach

Table 4-3 – (continued)

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Commercial boating	Two trips per day/permittee 30 passengers/trip. 10 companies/day Total of 200 clients/day	One trip/day/permittee. 30 passengers/trip 10 companies/day weekends, historical average (4-5) on weekdays. 10 trips or 200 passengers per day total maximum.	One trip/day/permittee plus 2nd trip allocated based on historical use. 10 trips or 200 passengers per day total maximum on weekend days. 8 trips or 160 passengers per day total maximum on weekdays.	3 trips per day/permittee 45 passengers/trip No restriction on number of companies/day Total of 400 clients/day
Whitewater boating flows	Pursue water flows to maintain both whitewater rafting and fishing recreational use, similar to the flow occurring at the time of wild and scenic river designation	Pursue water flows that provide for mid morning launches (seven days/week, 9am–noon water releases) to enhance whitewater rafting and at flows that are less damaging to streamside vegetation and habitat to enhance fishing opportunities	Pursue river flows for recreation use to favor flows that are more conducive to fish habitat improvement and restoration of the river channel.	Pursue water flows to maximize whitewater rafting opportunities (seven days/ week, 9am–noon water release start time)

Roads and Access

Resource Goals

- The outstandingly remarkable values of recreation, scenery, fish and wildlife, and cultural resources (prehistoric, historic, and Native American traditional use) are not diminished as a result of road management actions. An appropriate transportation system is maintained to protect and enhance outstandingly remarkable values and to move towards attaining "Aquatic Conservation Strategy" objectives and state water quality standards. The transportation network is adequate for river access, OHV use, resource management, PacifiCorp operations and maintenance, and access to private lands (KFRMP/FEIS, Page 71)

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- Road segments are managed so as to not contribute to water quality problems, cultural site damage, noxious weed dispersal, or riparian/wetland degradation are identified. In cooperation with affected landowners and user groups, such roads are resurfaced, closed, decommissioned, or converted to trails.

Summary of Issues

There are numerous roads within the river canyon that are user-developed and not maintained. BLM has closed a number of these roads, via barriers, to protect cultural resources and reduce erosion, but many closures are no longer effective. There is concern that road location and OHV activity has led to decreased riparian and aquatic habitat quality. User-created roads and access have led to damage to significant prehistoric and historic sites and Native American traditional use areas. There is public interest in driving for pleasure (see Recreation section) and accessing recreation facilities.

Actions Common to All Alternatives

- The following descriptions define the scope of the proposed treatments. These descriptions correspond with those in the Western Oregon Transportation Management Plan (BLM 1996), although some terms have been grouped for clarity (see Table 4-4).

Table 4-4.–Comparrison of terminology used in this document and the Western Oregon Transportation Management Plan.

River Plan Terminology	Western Oregon Transportation Management Plan (BLM 1996) Terminology
Decommission	Decommission
Obliterate	Full Decommission
	Obliterate
Seasonal Closure	Temporary/Seasonal Closure
Administrative Use	
Spot Improvement	Level 3 Maintenance
Contiguous Improvement	Level 4 Maintenance

"Decommission" means that the road would be closed to motor vehicles on a long-term basis, but may be used again in the future. The road would be prepared to avoid future maintenance needs and would be left in an "erosion-resistant" condition by establishing cross drains, and removing road fill from stream channels and potentially unstable areas. Ditch-relief culverts would generally not be removed. The road would be barricaded. Slash would be placed on the road surface or small diameter (< 6" Diameter Breast Height (DBH) trees would be felled onto the road. Although the roadbed would not be ripped and conifers would not be planted, some seeding of herbaceous species could occur.

"Obliteration" means that the road would not be open to motor vehicles in the future. The road would be barricaded. Slash would be placed on the road surface or small diameter (< 6" DBH) trees would be felled onto the road. The road surface would be ripped in places and recontouring would occur where needed. Ditch-relief culverts would be removed and trees, shrubs, or grass could be planted on the road surface. This term includes both "Full Decommissioning" and "Obliteration" as defined in the Western Oregon Transportation Management Plan.

"Seasonal Closure" means that the road would be open for public use during part of each year. The length of the closure period would be based on resource concerns regarding wildlife habitat, and the susceptibility of road surfaces to rutting or erosion.

"Administrative Use" means that the road would be gated and would be open only for administrative access or by permit. Roads open for permitted use are described in the Recreation section.

"Contiguous Improvement" may include raising the road surface to prevent water ponding, providing roadside and leadout drainage ditches, and surfacing with materials to harden the road surface and minimize the potential for rutting from use during wet conditions. Treatment of vehicle tracks that have been created around wet areas will include providing drainage, scarification, and revegetation and blocking to prevent future travel if necessary.

"Spot Improvements" would be similar to contiguous improvements but on a more local scale. Spot improvements would address areas where vehicle passage is impaired by rough conditions or where resource damage is associated with a particular road segment.

Actions common to all alternatives include:

- Maintain primary access roads to ensure visitor safety (by continuing to remove rockslides and hazardous trees).
- Maintain access to private land within the planning area
- Continue the Pokegama Cooperative Seasonal Wildlife Closure.
- Manage the road network to meet best management practices and move towards attainment of "Aquatic Conservation Strategy" objectives.
- There would be no net gain of road mileage in riparian reserves. New road construction in riparian reserves would be contingent upon a net reduction (through obliteration) in riparian road mileage.

- Work with PacifiCorp, other private landowners, and other agencies (county, state, federal) to address resource concerns related to roads that cross their ownership/ administration.

- Use road inventory data and input from user groups to manage OHV use in the canyon.

Actions Specific to Each Alternative

(Refer to Maps 17a, 17b, 18a, 18b, 19a, 19b, 20a, 20b, and Tables 4-5, 4-6, 4-7, 4-8 and *Appendix H)*

Alternative 1

Under this alternative, road treatment opportunities would include limited resurfacing, relocating (obliterating roads in sensitive areas, coupled with constructing "replacement" roads), decommissioning, or obliterating roads that are causing ongoing resource damage.

Limited construction of new roads would occur where needed to access recreation developments.

Stream crossings would be improved to reduce diversion of hydrologic flow paths and ensure habitat connectivity.

Extensive spot improvements and some resurfacing along the Topsy Road would improve access and reduce resource damage. These roads would be passable by high clearance four-wheel drive vehicles, and access during winter would be limited (see Maps 17a and 17b).

Alternative 2

Under this alternative, resource enhancement opportunities would include resurfacing, decommissioning, or obliterating roads that are causing ongoing resource damage. Road treatments would be more extensive and restoration-oriented than those in Alternative 1.

Roads located in riparian areas would be managed to ensure that detrimental impacts to aquatic resources are reduced.

Some roads may be relocated to meet management objectives.

Stream crossings that divert streamflow, impair fish/herptile passage, or impair aquatic or wetland habitat quality would be enlarged, improved, or removed.

Extensive spot improvements and some resurfacing along the Topsy Road and the upper portion of the Powerhouse Road (north of the Klamath River Campground) would improve access and reduce resource damage. These roads would be passable by high clearance 4-wheel drive vehicles, and access during winter would be limited (see Maps 18a and 18b).

Alternative 3

Under Alternative 3, road mileage in the planning area would be reduced over time.

Roads that contribute to resource degradation would be decommissioned, obliterated, or resurfaced. Road treatments would be more restoration-oriented than those in Alternative 2.

Table 4-5.–Proposed public and recommended PacifiCorp road management actions

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Segment 1				
Construction	0	0.1	0	0.1
Decommissioning	0	0	0	0
Obliteration	0	0	0	0
Spot improvements	0.6	4.4	4.4	0
Contiguous improvements	0	0	0	4.4
No action[1]	10.0	6.2	6.2	6.2
Segment 2				
Construction	0.9	0.2	0.3	1.0
Decommissioning	0	1.9	1.0	0.3
Obliteration	4.9	9.2	12.6	5.6
Spot improvements	4.3	10.1	3.3	3.1
Contiguous improvements	0	1.6	0.7	9.8
No action[1]	34.4	20.8	26.0	24.8
Segment 3				
Construction	0	0.8	0.3	0.5
Decommissioning	0	0	2.1	0
Obliteration	0	0.5	0.7	0.1
Spot improvements	0	2.3	1.7	2.3
Contiguous improvements	0	0.1	0.1	0.1
No action[1]	12.9	13.0	18.0	15.6
Total miles of road by Alternative Boundary	**67.1**	**70.1**	**76.8**	**72.7**

[1] No Action includes roads on USFS, State of Oregon and other private lands.

Riparian road mileage would be reduced over time. Roads located in riparian areas would be retrofitted, relocated, or otherwise managed to ensure that detrimental impacts to aquatic resources are minimized.

Stream crossings that divert streamflow, impair fish/herptile passage, or impair aquatic or wetland habitat quality would be enlarged, improved, or removed.

Extensive spot improvements and some resurfacing along the Topsy Road and the upper portion of the Powerhouse Road would reduce resource damage. These roads would be passable by high clearance four-wheel drive vehicles, and access during winter would be limited (see Maps 19a and 19b).

Alternative 4

Under this alternative, road mileage in the planning area and in riparian areas could increase, to provide access for recreation opportunities, although roads would not be built where unacceptable resource damage could occur.

Limited seasonal road closures, decommissioning, obliterating, resurfacing, or relocation would occur to reduce resource damage or mitigate for increased human use. This alternative would favor resurfacing and relocation rather than decommissioning and obliteration.

New recreation developments and river access roads would be designed to as not to prevent attainment of "Aquatic Conservation Strategy" objectives.

Stream crossings would be improved to reduce diversion of hydrologic flow paths, ensure habitat connectivity, and mitigate for road-related resource damage.

Extensive contiguous improvements and resurfacing would improve access along the Topsy Road and the upper portion of the Powerhouse Road (north of the Klamath River Campground). These roads would be passable year round in standard low clearance passenger vehicles (see Maps 20a and 20b).

Table 4-6.— Proposed/recommended road management actions by ownership (miles) [1, 2]

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
BLM				
Construction	0.4	0.2	0.2	0.5
Decommissioning	–	1.6	1.6	<0.1
Obliteration	3.5	4.8	7.7	3.5
Spot improvements	3.6	12.3	6.3	1.8
Contiguous improvements		0.9	0.4	11.9
No action proposed	26.7	14.2	18.8	17.6
PacifiCorp				
Construction	0.5	0.9	0.4	1.0
Decommissioning	–	0.4	1.5	0.3
Obliteration	1.4	4.6	5.3	2.2
Spot improvements	1.0	4.4	3.1	3.5
Contiguous improvements		0.8	0.4	2.3
No action recommended	21.9	17.9	18.5	20.5
State of Oregon				
Obliteration	–	0.3	0.3	–
Spot improvements	0.3	–	–	–
No action recommended	0.7	0.7	0.7	1.0
USFS				
No action recommended	0.5	0.5	1.0	0.5
Private				
No action recommended	6.9	6.9	10.9	6.9
All roads within the planning area	**67.1**	**70.1**	**76.8**	**72.7**

[1] Miles are rounded to the nearest 0.1 mile.
[2] Does not include Topsy Road outside of the planning area

Table 4-7.—Summary of proposed/recommended road status designations (miles) [1, 3]

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Segment 1				
Open	10.6	8.2	5.6	10.1
Administrative Use	–	2.4	5.0	0.5
Segment 2				
Open	26.7	20.4	9.1	28.2
Seasonal closure	8.3	7.4	15.1	9.2
Administrative Use	4.6	4.8	5.9	1.2
Segment 3 [2]				
Open	7.3	7.4	7.8	8.0
Seasonal closure	–	–	–	0.5
Administrative Use	5.6	8.8	12.3	10.1

[1] Miles are rounded to the nearest 0.1 mile.
[2] Roads on non-PacifiCorp land in Segment 3 were assumed to be closed to use by the general public, although that is at the discretion of individual landowners.
[3] No access to non-PacificCorp private lands is affected by closures.

Table 4-8.—Summary of proposed/recommended stream crossing improvements (number of sites)

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Replace or improve existing stream crossings	7	13 [1]	14 [1]	10
Decommission road and remove crossing	2	8	10	4
Bridge Improvements [2]	2	2	2	2

[1] Stream crossings on tributaries to Shovel Creek may be removed in the future if the associated roads are relocated or decommissioned.
[2] Not including Klamath River Bridges.

Cultural Resources/Native American Traditional Use

Resource Goals

- Cultural resources are managed for public, scientific, and cultural heritage purposes. Management would continue to conserve and protect cultural resources for future generations by conducting survey and literature inventories on both public and private land. This information would then be maintained in a common database (KFRMP/FEIS page 43).

- Measures are used to minimize site and structure deterioration and vandalism. Mitigation to resolve conflicts between the prehistoric and historic resources and other

outstandingly remarkable values described under the 1994 scenic designation would be pursued.

- Government to government relationships with Native American Tribes is enhanced (KFRMP/FEIS page 43). Native American traditional use areas are maintained or enhanced to allow appropriate Tribal use. Interpretive and educational opportunities are provided and developed in cooperation with Native American Tribes.

Summary of Issues

An abundance of prehistoric and historic resources lie within the Klamath River Canyon. Some of these sites are located in areas of intensive recreation use, resulting in both intentional and unintentional damage to the cultural resources. Management concerns about how to reduce impacts to cultural sites from recreation use would be addressed in this plan.

Road development and use has lead to OHV damage to cultural resources. Concerns regarding access for Tribal members and conflicts with OHV activity should be addressed in this plan. This plan should also consider how vegetation management practices and prescribed fire could help maintain food and material gathering areas.

On both private and BLM-administered lands, historic sites are rapidly deteriorating and some have been vandalized. Management concerns exist on how to manage these structures.

Native Americans have used the river canyon for thousands of years and continue to use the area. The canyon is spiritually significant, and a source for food and craft material gathering. The origin, use, importance, and preferred management of these sites vary between different neighboring Native American groups and federally recognized Tribes. This has led to a difficult and complex situation for the BLM.

Actions Common to All Alternatives

- Nomination of the Klamath River Canyon to the National Register of Historic Places would be finished and submitted.

- The BLM would continue to conduct cultural resource surveys/inventories prior to implementation of ground-disturbing activities and practice avoidance of all sites during such activities (Section 106 of the National Historic Preservation Act, 1966, amended 1992; and 36 CFR Part 800).

- The BLM would further protect sites through the development of a site-monitoring program designed to systematically evaluate sites to assess baseline site conditions.

- Native American traditional use areas would be identified and managed through Tribal consultation .

Actions Specific to Each Alternative

(Refer to Map 4 and Table 4-9 and Appendix H)

Alternative 1

This alternative would focus on documenting historical sites using Historic American Buildings Survey/Historic American Engineering Record standards (HABS/HAER), in addition to conducting BLM Class I inventories on each site, and does not propose to rehabilitate, reconstruct, restore historic structures, nor would the alternative pursue public outreach and excavation as educational/mitigation tools (see Table 4-9 and Map 4).

The Historic American Buildings Survey/Historic American Engineering Record (HABS/ HAER) standards consist of measured drawings, large-format photography, and written history. When complete, this documentation would be archived at the Library of Congress and be available to the public. BLM Class I inventories are defined as a review of published and unpublished documents, records, files, registers, and other sources, resulting in analysis and synthesis of all reasonably available data.

Limiting motorized access to existing roads would minimize erosion and sedimentation effects on cultural sites. Access to Native American traditional use areas would be maintained.

Inventory would be expanded to include unsurveyed BLM lands. Information gathered from the expanded cultural resource surveys/inventories and monitoring, such as the locations of all the sites and Native American traditional use areas in the project area, combined with evaluations (of present condition, and assessment of the damages that are occurring and could

Table 4-9.— Cultural Resources management actions by alternative

Action	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Prehistoric				
Sites capped	1	1	0	2
Sites fenced	0	2	0	1
Access controlled sites	0	1	3	0
Establish caretaker	0	0	0	1
Research	1	1	1	1
Historic				
Sites documented [1]	10	10	10	10
Sites stabilized	0	3	2	3
Sites rehabilitated	0	2	4	4
Research	1	1	1	1
Native American Traditional Use				
Research	1	1	1	1
Class III inventory [2] (100% survey)	Unsurveyed BLM lands only	Unsurveyed BLM lands and resurvey BLM lands not meeting Class III standards	Unsurveyed BLM lands; resurvey BLM lands not meeting Class III standards; and survey unsurveyed high probability areas on private lands	Unsurveyed BLM lands; resurvey BLM lands not meeting Class III standards; unsurveyed private lands not tied to projects; and resurvey private lands not meeting Class III standards

[1] Historical sites would be documented according to HABS/HAER standards, which consists of measured drawings, large-format photographs, and written history, along with a Class I overview/archival study. A Class I inventory is defined as a documentation review of published and unpublished documents, record, files, registers, and other sources, resulting in analysis and synthesis of all reasonably available data.

[2] Class III inventory is a continuous, intensive survey of an entire target area, aimed at locating and recording all archaeological properties that have surface indication, by walking close intervals (<30 meters) until the area has been thoroughly examined.

occur), would help the BLM make more informed decisions on protection and enhancement measures. In response to Tribal input, gathering new information via excavation would be minimized on public lands and discouraged on private lands.

Alternative 2

Cultural resources would be protected from erosion, recreational, and project-related impacts. Protection measures would be expanded by developing outreach/education programs, establishing working partnerships with Tribes and interested groups, expanding cultural resource inventories to cover all BLM lands and resurvey BLM lands that do not meet Class III standards, implementing both natural and unnatural stabilization techniques. The aim of the programs and partnerships would be toward cultural resource protection through education, via interpretational signs and presentations, such as a ”sensitivity toward cultural areas” message in interpretive and safety talks during rafting trips. Partnerships may be used to help carry out stabilization projects and interpretation projects (see Table 4-9 and Map 4).

Information gathered from the expanded cultural resource surveys/inventories and monitoring, such as the locations of all the sites and Native American traditional use areas in the project area, combined with evaluations (of present condition, and assessment of the damages that are occurring and could occur), would help make more informed decisions on protection and enhancement measures. In response to Tribal input, gathering new information via excavation would be minimized on public lands and discouraged on private lands.

Alternative 3

Management emphasis would be on protecting cultural resources from erosion, recreational, and project-related impacts. Protection would include rehabilitating historical structures (see Table 4-9 and Map 4), increasing restrictions on motorized recreation, enhancing Native American traditional use areas by supporting forest health practices, discouraging public outreach and excavation as educational and mitigation tools, and inventorying all unsurveyed BLM lands as well as high probability areas on private lands (through cooperative agreements).

Alternative 4

Management of cultural resources would continue to protect sites according to regulation. Use of excavation, as a mitigation and research tool would be actively promoted. Restoration of historic structures would be pursued (see Table 4-9 and Map 4).

Interpretation signs, pamphlets, and presentations would be developed to foster respect for cultural resources and discourage vandalism. In addition, management would increase law enforcement patrols, and seasonally encourage the use of volunteer “caretakers” through the development of RV host sites at select locations in the canyon. Cooperative agreements with Tribes would be pursued and outfitters would be asked to incorporate a “sensitivity toward cultural areas” message in interpretive and safety talks during raft trips.

Vegetation Treatments

Resource Goals

- Conifer forests and woodlands are managed as healthy stands of site-appropriate species. Stands are relatively open, with density within site potential. Fuels are at a relatively low level, and low-intensity fires can be accommodated without excessive tree mortality. Insect and disease occurrence is at endemic levels. Oak woodlands are open savanna, and trees are vigorously growing. Mast (acorn) production is at a high level. Mixed shrubfields with wedgeleaf ceanothus are 30 years old or less, with

palatable browse in deer winter range. Western juniper dominance is limited to rocky outcrops, ridges, and other historic sites where natural fire frequency is limited by lower site productivity and sparse fuels.

- Wild and scenic river values are maintained or enhanced by restoration treatments that improve condition and health of vegetation.

- Irrigated meadows in Segment 3 are managed to support a mixture of native grasses, forbs, and shrubs and nonnative pasture grasses. The extent of noxious weed populations would be reduced from current levels. The withdrawal of water to supply these meadows would not substantially affect water quality and aquatic habitat.

- Processes that shape the distribution and extent of riparian areas are restored. The composition and character of riparian vegetation communities would resemble the potential natural community associated with the hydrologic, geomorphic, and ecologic character of a given site.

- New infestations of noxious weeds are kept to a minimum, and existing population centers are treated.

- Populations and habitat of rare plant species and their communities are in a stable or improving condition.

Summary of Issues

Vegetation manipulation should be considered in this plan to maintain or enhance wildlife and fish habitat, scenic quality, water quality, ecosystem health, and Native American traditional use areas (food/materials gathering), and reduce the hazard of damaging wildfires (see Fire section). This plan should evaluate how the vegetation would be managed in the short term and long term, including management and control of noxious weed species.

Actions Common to All Alternatives

BLM actions would be designed to meet the guidance given in the KFRMP/FEIS, for the "Aquatic Conservation Strategy," based on the "Northwest Forest Plan," and the total maximum daily load/water quality management plan scheduled to be completed in 2004.

Inventories for special status species, including Survey and Manage (S&M) species, are performed and sites protected and/or managed, according to the appropriate guidelines, prior to ground-disturbing activities.

Management is proposed for the narrow bands of riverine riparian communities that occur along the river. These areas would be affected by altered flow regimes and channel restoration projects (which would create areas favorable for development of riparian vegetation). Specific areas are identified within the aquatic resources section.

The prescriptions for treatment of each plant community would generally be the same for all alternatives; however, methods and timing would differ. The main differences by alternative are the locations and total area of treatment (as determined by each alternative's resource emphasis), and mitigations for other affected resources. General treatment prescriptions by plant community are discussed as follows.

Integrated management of noxious weeds would include systematic inventories of the planning area, education, prevention, and control, using manual, mechanical, chemical, and biological methods.

Conifer forest and woodland: Reduce overstocking by thinning. Each potential treatment area would first be examined to determine stand conditions (species, size classes, density) in relation to site capability (see Map 5). Based on this information, prescriptions for thinning and follow-up fuel treatment would be made (in denser stands, up to half the basal area of trees may be removed). Cutting of excess trees would be mainly done by machine on gentler slopes (<35 percent), and manually with chainsaws on steeper slopes. A thin layer of borax would be spread on larger stumps to prevent infection by annosus root rot. In stands where road access is available, merchantable size logs may be skidded to roadside landings and removed from the area by truck.

In sensitive areas and on slopes over 35 percent, helicopter or cable yarding of logs to landings within or above the canyon rim could be done. The value of these logs would be used to reduce the expected high cost of the thinning treatment. No sustained supply of logs is planned from these stands, and no allowable sale quantity would be identified for timber products.

Cutting of excess trees results in a large volume of dead wood, which is fuel for potential wildfires. Further treatment of this material is necessary to reduce the fire hazard. Some of this material could be made available for campground use or public firewood collection. Removal for biomass and energy production could conceivably be done, but access and removal costs would be prohibitive in most parts of the planning area.

On slopes under 35 percent, shredding by machine (either during the cutting operation or as a follow-up after cutting), reduces wood size and arrangement, and reduces fire hazard. Piling slash concentrations in open areas for later burning also reduces slash. In areas of lighter fuels, as well as in mechanically treated areas, under-burning would further reduce the fuels and fire hazard. On slopes over 35 percent, hand piling and burning of the slash would be done.

Should wildfires, insect mortality, or other stand-replacing events occur, salvage of the trees for timber products would be considered, especially to reduce the high fuel loads of the dead trees and promote long-term enhancement of scenic resources. Follow-up treatments to re-establish conifer forest and woodland stands would be tree planting, control of competing vegetation, animal damage control, and, later, density control thinning of the resulting young stand.

Where larger, old-growth trees have a dense understory of small trees and other vegetation growing below them, these large trees are commonly under moisture stress. Understory trees would be heavily thinned out to relieve stress on large trees (this treatment would also apply to all other plant communities where feasible).

After initial fuel reduction treatments, a maintenance underburn program would be established to periodically run light underburn through the stands to reduce fuel loading and understory densities (see Fire and Fuels section).

Individual large tree management would occur where the potential exists for eagle or osprey nests. Upland vegetation communities within riparian reserves are preferred, because of access to foraging areas. This type of management would entail selecting desired leave trees, reducing fuel buildup and ladder fuels around the trees by thinning shrubs and small trees beneath the drip line. Removing competing vegetation within up to two crown widths would reduce moisture stress.

Management of nesting, roosting, and foraging habitat for spotted owls would involve density management of some stands to maintain stand health. Treatment would maintain a multi-storied stand with a high canopy closure. Thinning may involve removal of some of the larger trees to promote a multi-storied stand or species diversity.

Open grown pine trees appear to be important for selection as granary (storage) trees for acorn woodpeckers. Scattered individual pines in other vegetative communities would receive treatment to reduce fuel reduction and ladder fuels.

Forest management within riparian reserves would involve thinning of stands to a sustainable level. During this thinning, the objective will be to retain the multi-storied and multi-species canopies. In some areas, conifers adjacent to streams may be thinned heavier to favor riparian vegetation.

Oak woodlands: Oaks would be managed to improve mast acorn crops, forage, and cover for oak-dependent species (see Map 5). This will be accomplished with manual or mechanical thinning that spaces the trees to 30' - 40' between oak trees. Trees selected to leave would be healthy, full-crowned trees that can develop a full canopy. On slopes under 35 percent, cutting would be done either by machine (shear, dozer, slashbuster, etc.) or manually by crews with chainsaws, while steeper slopes would be manually cut only. Further treatment of the cut trees, by mechanical shredding/chipping, and/or burning, would be done as described in the "conifer forest and woodland" section above. After initial fuel reduction treatments, a maintenance underburning program would be established to periodically reduce fuel loads and sprouts, and maintain an open oak savanna community.

Individual oak trees in mixed conifer and pine stands would receive treatment also. Thinning of competing vegetation would be done around the large oaks. Conifers may be removed to maintain the oak.

Juniper woodlands: Young, invasive juniper would be cut, followed by a fuel reduction treatment (see Map 5). Old growth juniper would be left uncut (old growth juniper are those over 130 years old, which were established before natural fire was, in effect, eliminated from the canyon).

Mixed shrub: Management would vary somewhat depending on species present (see Map 5). Dense stands of mixed shrub may have manual slashing or mechanical treatment prior to a prescribed burn. Pretreatment will create ignition sources or cut fuels down to ground level, so they can be treated with fire. Fire would be used to create a mosaic pattern and rejuvenate fire-generated species.

Slashing alone would be enough to stimulate some species of shrub, such as wild lilac (*Ceonothus intergerrimus)*, serviceberry (*Amelanchier florida*), bitter cherry (*Prunus emarginata*), etc. In some areas, these shrub species will be severed below the browse line to stimulate regrowth as a food source for big game. Residual slash would be treated on a case-by-case basis.

Stands of wedgeleaf ceonothus (*Ceonothus cuneatus)* would be treated with fire to rejuvenate stands. This species is regenerated by heat, and needs fire or bare soil over summer periods to stimulate seed establishment. This species is extremely important to wintering deer and periodic treatment is crucial to keep stands producing. The stands would need to be rejuvenated approximately every 40 years. Only 25 percent of these stands would be treated in a decade.

Dry meadow: In many areas, dry meadows need rejuvenation and or removal of invasive species (see Map 5). Shrubs, juniper, or other trees would be slashed where they are encroaching on meadow areas. Some areas may involve tilling and replanting with native species. Non-native species may be used as a cover crop to establish native species. Fire would be used extensively to maintain dry meadow areas.

Irrigated meadow: Management of these meadows would involve a combination of active measures (such as irrigation, mowing, seeding, grazing, and burning) and passive measures (such as natural inundation, construction of exclosures, natural succession).

Other vegetation types, such as riparian or dry meadow, within the mapped irrigated meadows (refer to chapter 2) would be managed similar to other riparian or dry meadow communities (see Map 5).

Riparian: A variety of treatments could occur within streamside riparian areas and upland wet meadows, depending on site characteristics and management emphasis (see Map 5). Treatments could include constructing exclosures, decommissioning roads and improving or removing stream crossings, thinning, burning, mowing, seeding, soil ripping (in compacted areas), restoring hydrologic patterns by removing berms or ditches, noxious weed control, or aquatic restoration.

Actions Specific to Each Alternative

(Refer to Maps 5, 21, 22, 23, 24 and Tables 4-10, 4-11, and Appendix H).

Alternative 1

Conifer forest and woodland treatments would be limited to fuel reduction, especially in areas with other resource emphasis. Prescribed fire would be used only when a unit is randomly selected (refer to "Fire Management Environmental Assessment #OR-014-94-09"). Oak woodland thinning and fuel reduction treatment would be done in priority areas as wildlife projects to increase production of mast (acorns) to benefit wild turkeys, acorn woodpeckers, and mule deer.

All selected units would be in areas unseen from the river.

Some riparian forest management would be proposed, to improve habitat conditions for pond turtles.

The only shrubfields proposed for treatment with fire would be areas where manual treatments have already been conducted. These shrubfields would be further treated with prescribed fire.

No meadow treatments would be proposed under this alternative.

No changes in current management would be recommended for irrigated meadows.

Forest and woodlands treatments would be limited to oak stand enhancements and fuel treatment.

See Map 21 (Tables 4-10, 4-11) for the proposed vegetation treatment locations with in the project area for Alternative 1.

Alternative 2

Conifer forest and woodland treatments would involve thinning stands mainly on lower slopes, with follow-up fuel treatment. Prescribed fire random selections would also be done. Oak woodland thinning and burning would increase over levels prescribed in Alternative 1.

Shrubfields would be treated for the benefit of big game. Some dry meadows would be treated to improve forage quality for big game and birds.

Irrigated meadows would be managed for native wet meadow and floodplain habitats. Principles of adaptive management would be applied to achieve long-term vegetation management and wildlife habitat objectives. Long-term management options include:

Table 4-10.—Plant communities by ownership (acres)

Plant Community	Alternative 1					Alternative 2					Alternative 3					Alternative 4				
	BLM	USFS	Pacifi-Corp	Other private	Oregon	BLM	USFS	Pacifi-Corp	Other private	Oregon	BLM	USFS	Pacifi-Corp	Other private	Oregon	BLM	USFS	Pacifi-Corp	Other private	Oregon
Conifer forest and woodland	2,741	10	942	786	115	2,723	10	1,634	1,041	115	3,315	235	2,220	2,481	115	3,147	11	2,221	1,044	115
Dense oak woodland	612	0	149	62	0	612	0	286	62	0	612	0	287	135	0	612	0	286	62	0
Open oak woodland	1,513	163	1,097	309	3	1,513	163	1,228	604	3	1,803	162	1,706	715	3	1,800	162	1,706	606	3
Juniper woodland	0	0	0	6	0	0	0	44	6	0	0	12	53	7	0	0	0	53	6	0
Mixed shrub	1,051	89	375	226	0	1,051	89	694	226	0	1,272	161	1,466	401	0	1,251	89	1,466	226	0
Rabbitbrush/ sagebrush	11	0	3	0	0	12	0	85	0	0	184	0	480	91	0	184	0	480	0	0
Dry meadow	340	27	251	94	0	340	27	254	110	0	340	28	267	146	0	340	27	267	110	0
Riparian	45	2	103	20	0	62	2	245	21	0	45	3	246	37	0	62	2	246	21	0
Irrigated meadow[1]	0	0	372	0	0	0	0	374	0	0	0	0	374	0	0	0	0	374	0	0
					0															
Total	6,313	291	3,292	1,503	118	6,313	291	4,844	2,070	118	7,571	601	7,099	4,013	118	7,396	291	7,099	2,075	118
Grand total by alternative			**11,517**					**13,636**					**19,402[2]**					**16,979**		

[1] The extent of mapped vegetation communities are subject to revision based on new or updated information.

[2] Total suface arcres in planning area is calculated at 19,765 (19,402 land + 363 water/misc.)

Table 4-11.—Vegetation treatments by ownership (acres/decade)

	Alternative 1		Alternative 2		Alternative 3		Alternative 4	
	BLM	Pacifi-Corp	BLM	Pacifi-Corp	BLM	Pacifi-Corp	BLM	Pacifi-Corp
Conifer forest and woodland [1]	557	0	1,238	305	1,638	925	1,277	429
Dense oak woodland [1]	115	0	115	99	286	115	115	72
Open oak woodland [1]	299	0	608	372	723	631	616	520
Juniper woodland [2]	0	0	0	0	0	0	0	5
Mixed shrub [3]	130	0	538	367	700	644	538	537
Rabbitbrush/sagebrush [3]	0	0	12	3	52	203	114	65
Dry meadow	63	0	215	46	215	103	215	46
Riparian	7	0	52	166	62	245	9	22
Irrigated meadow[4]	0	0	0	374	0	374	0	0
Total	1,171	0	2,778	1,732	3,676	3,240	2,884	1,696
Grand total by alternative	**1,171**		**4,510**		**6,916**		**4,580**	

[1] Treatments would be mainly mechanical and hand thinning followed by prescribed fire for fuel reduction treatments.
[2] Treatments would be cutting of young, invasive juniper, followed by fuel reduction treatment.
[3] Treatment would be mainly prescribed burning.
[4] The extent of mapped vegetation communities are subject to revision based on new or updated information.

- Use of existing irrigation diversions along the river and Shovel Creek (use of the Negro Creek diversion would be phased out)
- Altering or improving the configuration of irrigation infrastructure
- Noxious weed control
- Mowing and/or grazing
- Planting of native and nonnative species, consistent with long-term management objective
- In stream restoration in the river and restoration of floodplain pools and sloughs.

Riparian features would be enhanced through a program of targeted restoration actions in riparian areas, and would be focused in areas listed in Appendix H. Riparian areas would be managed for resource goals of vegetation composition and distribution. Moderate levels of exclosure construction, road decommissioning, and stream crossing improvement/removal would address factors that impair riparian communities and water quality.

Options for maintenance of wet meadow communities that are at risk of conversion to dry sites due to altered hydrologic regimes (reduced floodplain inundation) could include short-term use of existing abandoned irrigation works. Understory thins would occur in riparian mixed hardwood/conifer forests along portions of Hayden, Shovel, and Negro Creeks. Prescribed fire use, followed by seeding with native plants, would occur in wet meadows currently dominated by nonnative or invasive plant communities.

See Map 22 (Tables 4-10, 4-11) for the proposed vegetation treatment locations with in the project area for Alternative 2.

Forests and woodlands would be treated to promote the enhancement of scenic river and ACEC values, primarily scenic and wildlife.

Systematic inventory of the planning area for special status species would be conducted.

Interpretive signs would be placed in high use recreation areas for noxious weed awareness/ prevention.

Alternative 3

Conifer forest and woodland treatment would include all stands over the life of the plan, with the approximate acreage shown in Table 4-11, for the first decade. In general, ponderosa pine would be favored, but a mix of species and size classes would also be maintained. All oak woodlands would be thinned, with a follow-up fuel treatment (usually burning) during the life of the plan. Approximate acreage for the first decade is shown in Table 4-11.

Shrubfields and meadow areas would receive increased management emphasis. Segment 3 would have an increase in management across all vegetative communities.

Irrigated meadows would be managed for native wet meadow and floodplain habitats. Principles of adaptive management would be applied to achieve long-term vegetation management and wildlife habitat objectives. Long-term management options include:

- Gradually phasing out the use of the Shovel and Negro Creek diversions, as well as some or all of the diversions from the river. Altering or improving the configuration of irrigation infrastructure.

- Noxious weed control.
- Mowing and/or grazing.
- Planting of native and nonnative species, consistent with long-term management objectives.
- Instream restoration in the river and restoration of floodplain pools and sloughs.

Riparian restoration activities would be expanded to encompass a more holistic ecosystem restoration approach, and would be focused in areas listed in Appendix H. Riparian reserves would be managed for desired vegetation composition and distribution. Extensive exclosure construction, road decommissioning, and stream crossing improvement/removal would address factors that impair riparian communities and water quality. Understory thinning would occur in riparian mixed hardwood/conifer forests along portions of Hayden, Shovel, and Negro Creeks.

Prescribed fire use, followed by seeding with native plants, would occur in wet meadows currently dominated by nonnative or invasive plant communities.

See Map 23 (Tables 4-10, 4-11) for the proposed vegetation treatment locations with in the project area for Alternative 3.

Systematic inventory of the planning area would be conducted for special status plant species, including S&M species.

Funding would be sought for proactive restoration of sites treated to control noxious weeds, to enhance native plant species.

Post-project inventory would be conducted for noxious weeds in areas disturbed by vegetation management actions. Forests and woodlands treatments would improve health and be aimed at returning the stands to a more historically natural condition.

Alternative 4

In conifer forests and woodlands, all areas identified in Alternative 2 would be treated, with priority given to areas adjacent to recreation sites, river corridor, trails, and roads. Oak woodland treatments would be applied as Alternative 2, with priority to areas adjacent to recreation sites, river corridor, trails, and roads. Slightly more acres are to be treated in this alternative because there are more recreation sites proposed.

Shrubfield management would be similar to Alternative 2 except in Segment 3. In this segment, more treatment areas are proposed within a larger boundary.

Irrigated meadows may be fenced to discourage OHV use. Limited restoration may occur as mitigation for the proposed Berwick Campground.

Practices designed to protect springs and wetlands from damage by roads and road use would be focused in areas listed in Appendix H. Moderate levels of exclosure construction, road decommissioning, and stream crossing improvement/removal would address factors that impair riparian communities in highly visible locations. Riparian vegetation communities would be managed to reduce and mitigate recreation impacts.

Forests and woodlands treatments would improve health and condition of stands especially around high recreation use areas and in important wildlife habitat.

See Map 24 (Tables 4-10, 4-11) for the proposed vegetation treatment locations within the project area for Alternative 4.

Interpretive signs would be placed in high use recreation areas for noxious week awareness/ prevention.

Interpretive brochures on noxious weeds would be made available in high use recreation areas.

Terrestrial Species/Habitat

Resource Goals

- Habitat is managed for a rich diversity of wildlife species. Wildlife management is focused on special status species with the objective to maintain healthy populations. Management promotes the recovery of listed species.

- Diverse terrestrial habitats are developed with a mixture of habitat types and seral stages. The quality and connectivity of unique habitats such as oak woodlands, grasslands, and riparian areas are maintained or improved.

- Unique habitat features, such as caves, rimrocks, large pine trees, etc., are protected.

- Manage critical big game winter range to provide adequate wintering habitat for big game populations, as suggested by ODFW- and California Department of Fish and Game-approved management objectives.

- Coordination with ODFW and California Department of Fish and Game on the management of all species (state listed special status and game animals, etc.) is ongoing.

Summary of Issues

Wildlife was identified as an outstandingly remarkable value for the wild and scenic river segment, and determined to be important and relevant in the ACEC. There are threatened and endangered (bald eagle and peregrine falcon for example) and special status species (western pond turtle, Townsend big-eared bat, and white-headed woodpecker, etc.) that use the river corridor. Habitat for these species should be protected or enhanced to promote their survival. Unique wildlife habitat such as big game winter habitat and oak woodlands should be improved. Impacts from wildlife habitat enhancement projects to scenic values and impacts to wildlife from other resource management practices should be addressed.

Actions Common to All Alternatives

- All major projects that “may affect” threatened, endangered, or candidate species will be discussed with USFWS, and proper consultation documents will be prepared if necessary.

- Established nest season restrictions and habitat buffers (KFRMP/FEIS) will be followed.

- State game management agencies will monitor and manage game populations within the planning area.

Actions Specific to Each Alternative

(Also refer to Map 7 and Table 4-12 and Appendix H for specific species and habitat management actions)

Alternative 1

Current wildlife management activities such as habitat improvement in oak stands and periodic prescribed fires would continue. Yearly monitoring for eagles, osprey, peregrines, and landbirds would continue. Periodic monitoring of bats, owls, carnivores and other special status species would occur as time and funding allow.

Table 4-12.—Summary of Terrestrial Habitat management actions by alternative

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Vegetation treatments[1] (acres/decade)	1,171	2,778	3,676	2,884
Structures	Modify signs and bridges for wildlife	Same as Alternative 1, except include existing buildings and new structures modified to accommodate wildlife	Same as Alternative 1	Increase wildlife viewing opportunities at recreational facilities
Inventory/monitoring	Threatened and endangered species only	Same as Alternative 1, except add some priority special status species	Same as Alternative 2, except add all special status species	Same as Alternative

[1] Vegetation treatments specific to wildlife habitat are included with other vegetation treatments displayed by plant community on Table 4-11

Habitat restoration such as big game winter range or oak woodlands is proposed. Existing wildlife habitat structures and projects would be maintained.

Existing road closures for wildlife purposes would be continued.

Alternative 2

Management emphasis would be primarily for game species, threatened and endangered species, and high-profile special status species such as raptors, acorn woodpeckers, and western bluebirds.

Surveys for some species such as woodpeckers and bluebirds would be established, and frequency of surveys would be determined.

Habitat improvements would occur on all vegetative types, including oak woodlands, old growth pine, mixed conifer stands, and shrubfields, for the benefit of a variety of species from land birds to big game.

Nesting structures would be installed for eagles and osprey in riparian zones. Additional nest structures for landbirds would be installed, to increase watchable wildlife opportunities near recreational developments.

Existing road closures for wildlife purposes would be continued.

Alternative 3

Management emphasis would be to restore a diverse mixture of habitat types and seral stages as quickly as possible. Inventory and monitoring of all special status species would be maximized.

Animal populations would be managed for natural processes, with human use de-emphasized. This would be coordinated with ODFW and California Department of Fish and Game.

Habitat restoration would use all proven methods such as mechanical, manual, and fire, to return to natural ecosystems as soon as possible.

Road closures for wildlife protection would increase.

Alternative 4

Wildlife populations and habitats would be managed for visibility to public users, and a Watchable Wildlife program specific to the Klamath River Canyon would be developed. Management emphasis would be primarily for game species and bird species that are desirable around recreational facilities. Nest structures and Watchable Wildlife programs would be proposed to enhance the viewing pleasure.

Areas around large mature pines would be managed to reduce competition and potential stress or injury from insects or disease. Space would be created around important large trees by thinning smaller commercial trees, treating shrub, and reducing fuels to improve chances of saving the large trees during wildfire. Other habitat improvements would enhance wildlife viewing (such as deer winter range and improved riparian habitat, etc.)

Surveys and monitoring would only be conducted for those species where monitoring is required (eagles and owls, etc.) or those affected by recreational developments.

Watershed Values

Resource Goals

- Water quality, which is a major contributor to the outstandingly remarkable values of scenery, fishery, wildlife, and recreation is maintained or improved. Upstream water quality improves and road-related sediment contributions in the canyon and tributary watersheds are reduced. Baseline data on water quality within the planning area is acquired through a long-term water quality monitoring program developed and implemented in cooperation with ODEQ, California State Water Resources Control Board, and PacifiCorp.

- The timing and magnitude of flows are managed so they are sufficient to directly and indirectly support the outstandingly remarkable values associated with Segments 2 and 3. As necessary to maintain and enhance ORVs and to meet "Aquatic Conservation Strategy" objectives, flow regimes maintain and enhance riparian resources, channel processes, water quality, functional aquatic habitat, and fish passage. Additionally, stabilized instream flows provide a wide array of fish habitats that are not exposed and/or "flooded out" on a daily basis. (Note: actual flows will likely be developed during FERC relicensing or as a result of other studies rather than as part of this River Plan.)

- Channel margins are restored so they support diverse and well-distributed riparian vegetation communities that meet the habitat needs of wildlife and birds. Recovery of deciduous and emergent riparian vegetation provides partial shading of the river and filtering of nutrients and sediment, thereby improving water quality.

- Ecosystem forms and processes referred to in the "Aquatic Conservation Strategy" objectives (refer to Chapter 2) are maintained in functioning condition, and restored when conditions are below system potential.

- Riparian reserves are managed so their ecologic, hydrologic, and geomorphic function support attainment of "Aquatic Conservation Strategy" objectives. Riparian reserves maintain and restore riparian structure and function, confer benefits to riparian-dependent species, enhance habitat for organisms that are dependent on the transition zone between upslope and riparian areas, improve travel and dispersal corridors, and provide for greater connectivity (both lateral and longitudinal) within the watershed. Well developed riparian communities provide a continual supply of coarse woody debris to stream channels, riparian areas, and adjacent uplands.

- The ecological potential and connectivity of key watersheds adjacent to the planning area are maintained so they are not adversely affected by actions within the planning area. If impacts are unavoidable, actions will be taken to minimize adverse effects.

- Watershed restoration projects are implemented as needed to improve aquatic habitat, riparian habitat, and water quality.

Summary of Issues

Streamflows in the river are affected on a seasonal basis by water allocation in the upper Klamath Basin and on a daily basis by operation of the J.C. Boyle hydroelectric facility. Although the current flow regime supports a number of beneficial uses and ORVs, reduced minimum flows, reduced peak flows (in Segment 1), and fluctuating river levels cause detrimental impacts to the same beneficial uses and ORVs. The BLM currently has instream flow claims (to support the recreation, scenic, and fisheries ORVs) pending in the Klamath Basin Adjudication. This plan will provide flow recommendations designed to maintain and enhance flow-dependent ORVs and water quality.

The Klamath River (in the planning area) is listed as "water quality limited" in accordance with section 303(d) of the Federal *Clean Water Act*. It has been listed due to impacts of nutrients and elevated stream temperatures on beneficial uses, such as habitat for threatened and endangered fish species. Water quality also affects resource values, such as recreation, for which the river was designated a state scenic waterway and national scenic river. This plan needs to identify possible ways to protect and enhance water quality within the planning corridor in support of other resource values. Water quality alterations associated with hydroelectric operations, streamflow, riparian vegetation, altered stream channel form, roads, and recreation use need to be addressed in the plan.

Numerous "Aquatic Conservation Strategy" objectives have been adversely affected by the hydroelectric project and, to a lesser degree, roads, recreation facilities, fire suppression, and past land use. This plan needs to identify a spectrum of restoration opportunities that would address these concerns and are compatible with the outstandingly remarkable values and ACEC values.

Actions Common to All Alternatives

- The BLM would secure adjudicated instream flows to maintain the fisheries, recreation, and scenic outstandingly remarkable values in Segments 2 and 3.

- During the FERC relicensing process, the BLM would provide conditions and/or recommendations regarding instream flows to maintain habitat conditions, and maintain or restore riparian resources and stream channel integrity (KFRMP/FEIS page F-10).

- In developing conditions and recommendations associated with a new FERC license for the hydroelectric project, the BLM would utilize studies conducted during the relicensing, as well other analyses that may be conducted.

- The BLM would continue to address 303(d) listed waters by implementing the "Forest Service and Bureau of Land Management Protocol for Addressing Clean Water Action Section 303(d) Listed Waters" (May 1999). Among other actions, this would include validation of listed water bodies, assessment of water quality impairment, and development of sufficiently stringent management measures to ensure attainment of beneficial uses. The Water Quality Restoration Plan (WQRP) would be the vehicle for implementing, monitoring, and evaluating the effectiveness of management actions. Plans would be developed concurrently or in advance of TMDLs that would be developed by the states. The BLM would cooperate with state water quality management agencies and with the Federal EPA throughout the TMDL development process.

- BLM actions and recommendations would be designed to meet the guidance given in the following documents:

    - The "Aquatic Conservation Strategy;" outlined in The KFRMP/FEIS (1995)

    - The total maximum daily load/water quality restoration plans scheduled to be complete in 2004

    - The "Forest Service and BLM Protocol for Addressing Clean Water Act Section 303(d) Listed Waters" (USFS 1999)

    - The 2002 "Memorandum of Agreement Between the USDA Forest Service and the ODEQ" (this Memorandum is substantively similar to the BLM/DEQ Memorandum that is currently being revised)

    - The laws and regulations of Oregon and California, including "Division 41, Statewide Water Quality Management Plan: Beneficial Uses, Policies, Standards, and Treatment Criteria for Oregon" (OAR 340-041) and "Division 7, Porter-Cologne Water Quality Act" (California Water Code)

    - The antidegradation policies of the State of Oregon (OAR 340-041-0026) and the State of California (Resolution No. 68-16).

- Implement best management practices to reduce adverse impacts to streamflow and water quality.

- PacifiCorp would retrofit the J.C. Boyle emergency spillway (located along the diversion canal in Segment 1) to address excessive erosion at the outfall, and associated fisheries, water quality, and scenic quality concerns.

- Conduct riparian monitoring, water quality monitoring, and proper functioning conditionsurveys

- Develop a system for determining site potential (including vegetation, channel form, and streamflow) using data collected during the FERC relicensing process and during other BLM/ODEQ efforts. Site potential objectives would be used to develop water quality restoration projects and best management practices (the extent of restoration activities varies by alternative).

- Delineate riparian reserves on federal land prior to ground-disturbing activities. Management actions could occur within riparian reserves, so long as they are consistent with "Aquatic Conservation Strategy objectives.

- Manage riparian reserves to achieve ACS objectives.

- Roads within riparian reserves would be managed to meet ACS objectives. There would be no net gain in road mileage in riparian reserves.

Actions Specific to Each Alternative

(Refer to Maps 17a, 18a, 19a, 20a and Tables 4-5, 4-6, 4-7, 4-8, 4-11, and Appendix H for projects that are designed to benefit watershed conditions)

Alternative 1

Watershed management would focus on maintaining or enhancing watershed and riparian function, and water quality.

No changes in flow regimes in Segment 1 would be recommended by the BLM.

No conditions or recommendations regarding the timing or duration of use of the PacifiCorp irrigation diversions on the river or in the Shovel Creek drainage would be made by the BLM.

No new roads would be constructed in riparian reserves, except in circumstances where alternate locations would cause unacceptable resource damage. Practices would be implemented to protect springs and wetlands from damage by roads and road use. Limited wet meadow restoration would occur where roads are causing highly visible resource damage.

Some roads near the river or other streams that parallel other nearby roads would be decommissioned or obliterated . Road removal adjacent to the river would accommodate restoration of wetland hydrologic processes and plant communities (see Map 17a).

Alternative 2

Watershed management would focus on maintaining and enhancing watershed and riparian function, and would also include a range of restoration projects designed to address watershed processes in high priority areas.

Flows for the river in this alternative would be based on the objectives of:

- Providing a variety of high quality, river-related recreation opportunities throughout the planning area, including the same general type and level of use as was occurring at the time of designation

- Ensuring that the scenic quality of the planning area, as it pertains to river flows, is not degraded

- Creating flow conditions that would allow native fish to access the full extent of available habitat (including the Bypass reach and reaches upstream from J.C. Boyle Dam)

- Maintaining high quality aquatic habitat for a variety of species and life stages.

During the FERC relicensing process, the Department of the Interior would utilize relicensing studies and other analyses to develop flow regimes that meet the resource management objectives listed above. Absent substantive analysis showing that resource management objectives would be met by other means, the following would be required or recommended as appropriate:

- Increased baseflows in Segment 1 to support fish migration.

- The implementation of a “modified run-of-the-river” flow regime in Segments 2 and 3, in which J.C. Boyle operations are allowed to alter instantaneous flows within a defined range around the daily average flow. Schedule powerhouse

Table 4-13. Summary of recommended flow regime concepts

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Segment 1				
Minimum flows	Give emphasis to securing instream flows for favorable channel conditions and fish passage	Increase baseflows to enhance fish migration	Increase baseflows, with seasonal variation, to enhance fish migration and ecological processes	Increase baseflows to enhance fishing and fish migration
Ramp rate	No Action	Reduce ramp rate during the recession of flood peaks	Reduce ramp rate during the onset and recession of flood peaks	Reduce ramp rate during the recession of flood peaks
Peak flows, pulse flows and recreation releases	No Action	No Action	Release occasional "geomorphic flows" and "pulse flows"	Schedule releases to enhance whitewater recreation
Segment 2				
Minimum flows	Give emphasis to securing instream flows for favorable channel conditions and fish passage	Provide sufficient flows for adult and juvenile stages for trout	Increase fisheries baseflows to provide for all 3 life stages for trout	Set flows to optimize whitewater recreation opportunities while providing flows sufficient for adult and juvenile stages of trout
Ramp rates	No Action	Reduce ramp rate	Reduce ramp rate, if peaking occurs	Reduced ramp rate
Daily flow fluctuations	No action, except as regarding minimum flows	Modify run-of-the-river flow regime	Run-of-the-river flow regime	No action, except as regarding minimum flows and ramp rates
Recreation releases	No Action	Schedule powerhouse releases to resemble timing, volume and duration that occurred at the time of Wild and Scenic designation.	No special releases to support recreation	Schedule powerhouse releases to enhance whitewater opportunities
Adaptive management	No flow changes anticipated unless as a result of the FERC relicensing process	Revise, as necessary, instream flow needs through the FERC relicensing process and other studies	Revise, as necessary, instream flow needs through the FERC relicensing process and other studies	Revise, as necessary, instream flow needs through the FERC relicensing process and other studies
Water rights	Secure adjudicated water rights for recreation and fisheries instream flows	Secure adjudicated water rights for recreation and fisheries instream flows	Secure adjudicated water rights for recreation and fisheries instream flows	Secure adjudicated water rights for recreation and fisheries instream flows
Segment 3	Flows in this segment are essentially the same as in Segment 2.			

*Note: Flows will be based on relicensing studies and other analyses

releases to resemble timing, volume and duration that occurred at the time of Wild and Scenic designation. Some peaking (within defined ramp rates) could occur if necessary to attain recreation flow objectives.

- A reduced ramp rate at the Powerhouse, relative to current levels.

PacifiCorp irrigation diversions from the river and Shovel Creek would be adaptively managed to restore wet meadow communities along the river in Segment 3, and that the diversion from Negro Creek be removed to eliminate adverse impacts to the downstream fishery.

Watershed and riparian features would be enhanced through a program of targeted restoration actions in uplands and riparian areas. Riparian reserves would be managed for site potential conditions of vegetation composition and distribution. Special management would occur at limited locations within the Shovel Creek riparian reserve and in the meadows adjacent to the river in Segment 3.

Some roads in riparian reserves would be decommissioned or obliterated to meet "Aquatic Conservation Strategy" objectives. Road removal adjacent to the river would accommodate restoration of wetland hydrologic processes and plant communities. Upland wet meadows would be protected from OHV damage using signs and fences (see Map 18a).

Alternative 3

Watershed management would focus on restoring watershed and riparian function throughout the planning area.

Flows for the river in this alternative would be based on the objectives of:

- Maintaining and restoring high quality aquatic habitat for a variety of species and life stages
- Creating flow conditions that would allow native fish to access the full extent of available habitat (including the Bypass reach and reaches upstream from J.C. Boyle Dam)
- Providing a variety of recreation opportunities throughout the planning area, though the balance between suitable flows for fisheries and recreation would favor the fisheries resource
- Ensuring that the scenic quality of the planning area, as it pertains to river flows, is not degraded

During the FERC relicensing process, the Department of the Interior would utilize relicensing studies and other analyses to develop flow regimes that meet the resource management objectives listed above. Absent substantive analysis showing that resource management objectives would be met by other means, the following would be required or recommended as appropriate:

- Increased baseflows in Segment 1 (to support various fisheries life stages).
- The implementation of a "run-of-the-river" flow regime in Segments 2 and 3. Full run of the river means only that the water that comes into J.C. Boyle Dam (from all up-stream sources) is released downstream from either the dam or power house at the same rate it enters, and does not imply that additional flow release would be required from Upper Klamath Lake. This alternative recommends minimizing flow fluctuations associated with peaking operations and upstream ramping.
- A reduced ramp rate at the powerhouse, relative to current levels.

PacifiCorp irrigation diversions from the river would be adaptively managed to restore wet meadow communities along the river in Segment 3, and that the diversions from Shovel Creek and Negro Creek be removed to eliminate adverse impacts to the downstream fishery.

Watershed and riparian restoration activities would be expanded to encompass more of the planning area. Riparian reserves would be managed for site potential conditions of vegetation composition and distribution. Some facilities (such as roads and recreational developments) within riparian reserves along the river would be removed and the sites revegetated.

Some roads in riparian reserves would be decommissioned or obliterated to meet "Aquatic Conservation Strategy" objectives. Road removal adjacent to the river would accommodate restoration of wetland hydrologic processes and plant communities (see Map 19a).

Alternative 4

Watershed management would focus on maintaining or enhancing watershed and riparian function, and on providing the flows and riparian features needed to maintain and enhance ORVs.

Flows for the river in this alternative would be based on the objectives of:

- Providing a variety of river-related recreation opportunities throughout the planning area
- Ensuring that the scenic quality of the planning area, as it pertains to river flows, is not degraded
- Maintaining and restoring high quality aquatic habitat in the designated/suitable segments of the river for a variety of species and life stages, though the balance between suitable flows for fisheries and recreation would favor the recreation resource more than other alternatives.

During the FERC relicensing process, the Department of the Interior would utilize relicensing studies and other analyses to develop flow regimes that meet the resource management objectives listed above. Absent substantive analysis showing that resource management objectives would be met by other means, the following would be required or recommended as appropriate:

- Increased baseflows in Segment 1 (to support whitewater kayaking and fish migration).
- That timing, volume and duration of releases from the powerhouse (for Segment 2 and 3) are established to enhance whitewater opportunities.
- A reduced ramp rate at the powerhouse, relative to current levels.

No conditions on the timing or duration of use of the irrigation diversions on the river would be made in this alternative. PacifiCorp irrigation diversions from Shovel Creek and Negro Creek would be adaptively managed to restore wet meadow communities along the river in Segment 3 and to reduce adverse impacts to the fishery.

Watershed management actions would be guided by the need to mitigate the impacts of expanded recreation opportunities. Practices such as road closures and fence construction would be implemented to protect springs and wetlands from damage by roads and road use. Limited wet meadow restoration would occur where roads are causing highly visible resource damage. Impacts to riparian reserves from new or upgraded recreation developments and opportunities would be avoided and/or mitigated.

New roads would not be located where unacceptable resource damage may occur to riparian reserves. Some roads that are parallel to the river or other streams would be decommissioned or obliterated. Road removal adjacent to the river would accommodate restoration of wetland hydrologic processes and plant communities (see Map 20a).

Aquatic Species/Habitat

Resource Goals

Fisheries and Aquatic Habitat

- Existing at-risk fish stocks and their associated habitats are managed for adequate protection (KFRMP/FEIS). Impacts associated with habitat manipulation, fish stocking, harvest, and poaching that threaten the continued existence and distribution of native fish stocks inhabiting federal lands are identified and eliminated (KFRMP/FEIS). Implement rehabilitation measures including, but not limited to, hydraulic and water quality improvements to protect and enhance fish passage, instream structures using boulders and log placement to create spawning and rearing habitat, placement of fine and coarse materials for over-wintering habitat, and establishment of riparian/wetland trees and vegetation for cover habitat and water quality protection and enhancement.

- Fisheries and recreational fishing outstandingly remarkable values in the project area are maintained or enhanced. Wild trout remain highly productive; both in terms of catch rate and recruitment (USDI-BLM 1990).

- The genetic diversity, adaptiveness, and abundance of redband trout in the project area for which the river segments were designated wild trout management areas are maintained or enhanced (ODFW 1997; California Department of Fish and Game 2000). Trout present in the project area are naturally spawned stock, and to retain unique resistance to high pH values, endemic disease *Ceratomyxa shasta*, and high summer water temperatures.

Licenses

- Existing leases, permits, rights-of-way, and easements are managed so that they do not retard or prevent the attainment of "Aquatic Conservation Strategy" objectives.

- Existing hydroelectric support facilities inside the riparian reserves that are essential to proper management of the hydroelectric project are managed so they meet "Aquatic Conservation Strategy" objectives (KFRMP/FEIS). Where these objectives cannot be met, support facilities would be either relocated outside the riparian reserves or operated and maintained in such a way as to eliminate adverse effects that would retard or prevent attainment of "Aquatic Conservation Strategy" objectives.

Land Tenure

- Appropriate actions are taken to assure that land acquisitions, exchanges, and conservation easements meet "Aquatic Conservation Strategy" objectives and facilitate restoration of fish stocks and other species at risk of extinction.

- Aquatic resources are managed so they promote long-term ecological integrity of ecosystems, conserve the genetic integrity of native species, and attain "Aquatic Conservation Strategy" objectives.

- The Klamath River and tributary streams and other waters are maintained or enhanced so that the fisheries potential is consistent with the BLM's "Fish and Wildlife 2000 Plan," the "Bring Back the Natives" initiative, and other nationwide initiatives.

Summary of Issues

Fisheries is one of the outstandingly remarkable values for which the Klamath River was

designated a national scenic river. Management concerns deal with the endangered Lost River and shortnose suckers, which are known to be occasional inhabitants of the Klamath WSR. The planning area is within the historic range of steelhead, Chinook salmon, and federally listed threatened southern Oregon/northern California Coho salmon. There are management concerns dealing with resident and anadromous fish passage in the river. The river has been designated as a wild rainbow trout fishery by Oregon and California. There is also a concern by fishermen about the lack of large fish within the river. There is evidence that the water peaking (repetitious high flows), which optimizes generation of power from J.C. Boyle Dam, impacts the aquatic habitat for fisheries on the stretches analyzed under this plan (and likewise, may affect the size of the fish). There may be opportunities to improve fish habitat.

Actions Common to All Alternatives

- BLM actions would be designed to meet the guidance given in the 1995 KFRMP/FEIS for fisheries resources.

- Proposed actions would be designed and managed at a minimum to not retard attainment of "Aquatic Conservation Strategy" objectives identified under "Standards and Guidelines For Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl" (1994), and the 1995 KFRMP/FEIS.

- All projects would be consulted on as necessary, both individually and cumulatively with appropriate management agencies (USFWS, National Marine Fisheries Service) for compliance with "Endangered Species Act" protections.

- It would be recommended that structural changes to the fish ladder at J.C. Boyle Dam be implemented to achieve better fish passage.

Actions Specific to Each Alternative

(Refer to Maps 25, 26, 27, 28 amd Table 4-14 and Appendix H)

Alternative 1

Federal land management of aquatic resources in the scenic river and ACEC is minimal and mostly in response to requirements of the *Endangered Species Act*. The distribution and abundance of fish species would not be expected to change as a result of this alternative.

The recreational fishing opportunity would remain largely undeveloped.

Monitoring would occur in order to determine status and conditions of fisheries populations and aquatic habitatsæthere would be no expected changes in the fisheries habitat or accessibility to fishing sites associated with this alternative.

Flows would be expected to remain under their current regimes and controls.

Long-term management agreements or land acquisition would not be proposed to benefit fish habitat or access for fishing. Pursuit of alterations in current facilities such as dams, fish ladders, and screening of canals to protect fish movement are not proposed in this alternative but may be pursued as part of other watershed restoration strategies (see Map 25).

Table 4-14.—Project summary for Aquatic Resources by alternative [1]

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Bypass canal/road sidecast	No action	Sidecast material removed and bankfull benches installed along 1.25 miles, passage concern removed	All sidecast on historic floodplains removed	Sidecast material removed to improve fish passage concern on approximately 500 feet of channel
Channel width enhancement (miles)	BLM 0 PC 0 Total 0	1.8 1.2 3.0	4.0 3.0 7.0	0.4 0.6 1.0
Sediment enhancement	No action	Establish a continuous sediment enhancement program	Restore sediment regimes	Spot enhancement based on other instream projects
Large woody debris	No action	Actions in all channels, balance with rafting needs in mainstem river channel	Maximize wood in all channels	Focus wood placemer in tributaries
Chute cutoffs/side channels enhancement	No action	Enhance/eliminate all secondary channels affecting river function	Enhance/eliminate all secondary channels affecting river function	Limited enhancement of secondary channels for rafting experience and secondarily for fish habitat
Historic bridge sites fish habitat enhancement	No action	Two bridge site abutments enhanced, two bridge site abutments removed	Remove all bridge site abutments (up to six sites)	Two bridge site abutments enhanced, two bridge site abutments removed
Bypass canal/road side cast	No action	Bankfull benches installed, passage issue removed	All side cast on historic flood plain removed	Passage issue remove
Irrigation diversion	No action	Redesign all diversions to enhance fish habitat	Remove as many diversions as possible	Redesign all diversions to enhance fish habitat

[1] Summary descriptions are for comparative purposes only and do not necessarily describe the actual scope of proposed projects (see Chapter 4, Table 4-1, and alternative maps for a more detailed action description). Attraction flows to enhance fisheries were not summarized in this table, as these actions would be facility operations based rather than on the ground land management actions.

Alternative 2

Activities to improve aquatic habitat would be addressed in this alternative, including channel roughness features and multiple life stage habitat needs of fish species.

Existing access to the river would be improved to provide a greater diversity of recreational fishing opportunities. Conflicts that may occur as a result of differing uses of the river would be resolved to the extent practicable to optimize multiple uses of the river.

Flow regimes more conducive to fish species productivity and life histories than current flows would be pursued.

Alterations in facilities and diversions within riparian reserves would be pursued to improve/protect the movement and life histories of resident fish species. Long-term management agreements or land acquisition would target, to an extent, improving mainstem and refugial aquatic habitat and recreational fishing accessibility issues. Functional barriers to fish migration (such as poorly regulated flows, inadequate or nonexistent facilities, and water quality limiting features) would be modified to minimize their effect (see Map 26).

Alternative 3

Fisheries production restoration would be emphasized, thus trail construction and road access for recreational users would be de-emphasized.

Restoration of fisheries habitat and natural flow patterns would occur to protect and restore distribution and abundance of all species and life-stages of resident and anadromous species if fish passage was restored down river. Elements of fish habitat: sediment (gravel) levels, stream bank, vegetative conditions, and large woody debris (CWD), would be restored to be within the range of natural variability. Additionally, water quality parameters that benefit fisheries resources would be improved through management within the planning area and through larger landscape level restoration efforts, such as TMDLs (see Map 27).

Instream flows that reflect the natural variability of the system to which the fish species adapted would be pursued. Long-term management agreements or land acquisitions would target protecting and restoring distribution and abundance of native wildlife species, including aquatic species.

Movement or modification of existing facilities and diversions located either instream or in the adjacent riparian reserves, including fish ladders and diversions, would be pursued so as to have no or minimal impact on the connectivity and condition of aquatic habitats through the planning area.

Alternative 4

Fisheries management goals would be to increase the recreational fishing opportunities in the planning area.

Additional access points for providing recreational fishing opportunities would be provided. Recreational fishing would be managed to provide a diverse range of opportunities in a more developed setting. Opportunities to increase fishing productivity, stream enhancement, and facility modifications that would not conflict with other recreational uses would be pursued (see Map 28).

Instream flows that optimize fishing opportunities and other recreational uses would be pursued in order to provide the greatest amount of recreational opportunities. Long-term management agreements or land acquisition would increase recreational fishing access, thus providing more opportunities.

Livestock Grazing

Resource Goals

- Livestock grazing is managed within the context of appropriate resource protection and/or preservation and sustained-yield principles, dependent on the specific alternative selected. Grazing management will be considered with the rangeland health standards and guidelines outlined in BLM Regulations, 43 CFR 4180.

Summary of Issues

Issues regarding livestock grazing are related to recreation, cultural resource, riparian area, and wildlife habitat management concerns. Past grazing use within the planning area has led to various levels of environmental disturbance and degradation, though current grazing use on public lands is at historically low levels. The vast majority of the livestock use currently takes place on private land.

Actions Common to All Alternatives

- All grazing management on public-administered lands would be in accordance with pertinent and appropriate BLM laws, regulations, and policies.

- Up to two miles of additional fencing may be constructed along gap portions of the Klamath River Rim northwest of the river as needed for livestock control.

Actions Specific to Each Alternative

(Refer to Map 8 and Table 4-15 and Appendix H)

Alternative 1

Edge Creek Allotment (0102): Current grazing management activities would continue up to the maximums in the current grazing leases (see Map 8). Existing rangeland improvement projects would be maintained, and new ones constructed, to improve livestock distribution. Rangeland monitoring data would be collected and evaluated periodically to ensure appropriate grazing use and that progress is being made toward the attainment of Range Health Standards.

Current fencing would be maintained to limit cattle use to either the Hoover Ranch area or the Ward Pasture (on top of the rim and out of the planning area).

Laubacher Lease Allotment (0155): Under this alternative, grazing use in this small allotment would remain the same as outlined in the Redding Field Office RMP/ROD, including the closure to grazing of the BLM lands within 0.25 mile of the river (see Map 8).

PacifiCorp lands: Grazing use on private lands would generally be as outlined in the PacifiCorp document: "Livestock Grazing on PacifiCorp's Klamath River Rangelands: Inventory, GIS Model Development, and Grazing Management Plan: Working Draft" (see Chapter 2, Livestock Grazing section in this document, for more information).

Alternative 2

Grazing management activities could continue up to the maximums allowed under the KFRMP/FEIS, though to a level consistent with maintaining/improving fish and wildlife habitat and providing optimum protection for other resource values.

Existing rangeland improvement projects would be maintained, and new ones constructed, if necessary for resource enhancement/improvement.

Rangeland monitoring data would be collected and evaluated periodically to ensure grazing use is appropriate and that progress is being made toward the attainment of Range Health Standards.

PacifiCorp: Under this alternative, the grazing use to be recommended for PacifiCorp lands could be variably reduced, deferred, and/or eliminated as necessary to facilitate or protect restoration or recreation related activities. These activities and projects are outlined in other (nongrazing) sections of this plan. The actual grazing management changes would be site-specific and determined in the future during the implementation of the specific management actions.

Alternative 3

Livestock grazing use would be generally excluded from the planning area and would be considered only if useful as a management tool to accomplish other resource restoration goals.

Additional fencing may be pursued, if necessary to inhibit livestock access to the canyon.

Periodic field checks would be made to ensure that unauthorized livestock do not graze the area.

Edge Creek Allotment (0102): Grazing use would be excluded from the canyon portions of the Ward Pasture (the portions below the canyon rim). Additional gap fencing along the rim might be necessary to effectively preclude cattle drift into the canyon from the grazing areas on top of the rim (see Map 8).

Laubacher Lease Allotment (0155): Grazing use on this small allotment would be eliminated under this alternative since all of it is located within the planning area (see Map 8).

Table 4-15. Summary of Livestock Grazing management actions by alternative

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Grazing management (animal unit months)				
BLM	171	125–171 [1]	0	125–171 [1]
PacifiCorp	2,500–3,000	0–2,000 [2]	0	1,500–2,500 [3]
Fencing projects (miles)	2	2	2	2

[1] Animal unit month refers to a range of reasonable amount that will still be available outside of excluded areas.
[2] Covers the range of possibility of diminished/no grazing use on PacifiCorp lands in the short term and the potential restoration of up to 2,000 AUMs in the long term. Actual number could vary widely based on type and speed of restoration project work and ultimate disposition and management of the PacifiCorp properties.
[3] AUM range covers a reasonable expectation of grazing use allowable outside special management areas (such as recreation sites, riparian reserves, and cultural sites).

PacifiCorp lands: No grazing use of PacifiCorp lands would occur, except where livestock would be useful in the accomplishment of other resource goals.

Alternative 4

Grazing management would be allowed to the extent that it does not significantly conflict with the recreation management and opportunities in the canyon.

Existing rangeland improvement projects would be maintained and new ones constructed, as necessary, for enhancing recreation and other human use opportunities. Livestock/recreation compatibility usually entails the exclusionary fencing of developed recreation sites.

Rangeland monitoring data would be collected and evaluated periodically to ensure grazing use is appropriate, and that progress is being made toward the attainment of Range Health Standards.

Wild Horses

Resource Goals

- Wild horses are managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat. Management activities affecting wild horses are undertaken with the goal of maintaining free-roaming behavior (BLM Regulations, CFR 4700.0-6).

Actions Common to All Alternatives

Wild horse management in the Pokegama Herd Management Area (see Map 8) would be basically the same under all the alternatives.

A very small portion of the herd management area, established under the 1971 *Wild and Free-Roaming Horse and Burro Act*, lies within the planning area. Stewardship of the herd management area, regardless of the alternative selected, must be done in accordance with BLM Regulations, 43 CFR 4700 (wild horse regulations), current policy and direction, and other documents. Wild horse management for the Gavin Peak Herd Management Area, which lies just outside the planning area, would continue to be the responsibility of the USFS Klamath National Forest Goosenest Ranger District and is not covered by this plan.

In general, the Pokegama Herd Management Area management would include:

- Monitoring of the wild horse herd management area including annual animal census, vegetative and habitat monitoring, and as necessary, water monitoring during drought.

- Periodic evaluation of the appropriate management level versus the habitat conditions and competing forage demands to ensure that herd numbers are within the sustained yield capacity of their range.

- Periodic animal removals, to stay within the appropriate management level range of 30-50 head.

- Revision and periodic update of the Pokegama herd management plan.

- All other management needs to be consistent with the herd management plan, wild horse regulations (BLM Regulations, 43 CFR 4700), and current BLM policy and direction.

No specific on-the-ground projects are proposed at this time within the planning area for wild horse management. An upcoming revision of the Pokegama herd management plan will likely propose additional or altered management, but such proposals are not appropriate as part of this planning effort.

Fire and Fuels

Resource Goals

- Fire is reintroduced into areas in which fire has a profound biological influence on ecosystem composition.
- Sustainable function and structure to plant communities is restored, with resulting improvement in forest and rangeland health for fire-adapted ecosystems. This includes restoring forest (and other plant community) composition from fire-intolerant species to fire-adapted species. Reduce the populations of encroaching white fir and western juniper.
- Major losses of sustainable ecosystem resources from catastrophic wildfire are reduced.
- Overall reducing large acreage multi-burn period fires minimize management costs. Fewer numbers and types of suppression resources are needed in extended attack and project fire situations.

Summary of Issues

Heavy fuel loads exist on forests, woodlands, and shrubfields in the river canyon. Historically, lightning has been high in this area, and, given the steep terrain, any fire occurrence could become a forest stand-replacing event. Past examples are the Big Bend and J.C. Boyle fires (in the 1980s). This plan would address needs for effective fuel reduction treatments. The potential loss of river canyon scenic quality to wildfire is high. Existing heavy fuel loads and the level of treatments necessary to protect scenic and wildlife values is a management concern. Planned prescribed fires need to be consistent with the federal *Clean Air Act*.

Actions Common to All Alternatives

- BLM actions would be designed to meet KFRMP/FEIS guidance.
- Appropriate management response to wildfire situations would be initiated, and prevention and education programs pursued.
- The practice of prescribed fire by random selection, as defined in EA-OR-014-94-09, would be continued .
- Fuel treatments would occur in the entire planning area, from the river to the first serviceable road above the canyon rim (the first likely fire break).
- Several types of fuel treatments would be used including: manual treatments (severing vegetation and hand piling followed by pile burning) along roads and campground areas; treatments using a tracked low pressure swing excavator used to break down vegetation followed by piling and burning (in areas where effects would be unseen from the river). Prescribed fire would be used to reduce fuels and to alter vegetation in conifer and deciduous forests and shrub fields. When prescribed fire is used, it would follow the restoration process described in EA-OR-014-94-09.

- A Klamath Falls Resource Area Smoke Management/Air Quality Plan will be completed in 2003. This plan would encompass the planning area.

- Fire prevention would include increased signing and joint patrol by Oregon Department of Forestry and the BLM. The Oregon Department of Forestry would continue to apply fire prevention adjective class and seasonal high-risk public fire closures as necessary. Commercial operations would continue to be managed by Oregon Department of Forestry and BLM to prevent and plan for the suppression of wildfire.

- Cooperative assistance agreements would be initiated with private landowners (using funding as authorized by the "Wyden Amendment") to meet fuels management objectives across ownership boundaries.

Actions Specific to Each Alternative

(Refer to Maps 21, 22, 23 24 and Tables 4-10, 4-11 and Appendix H)

Alternative 1

The fuels management program would be implemented with random burn selections, and would include minimal fuel treatment around recreation sites.

Alternative 2

The fuels management program would emphasize hand treatments with piling and burning of materials; and some random prescribed burn selections would be performed. Prescribed fire may be used to enhance species in Native American traditional use areas. All fuel management treatments would be strategically located in areas that are not seen from the river and other key observation points.

Alternative 3

In addition to the current random selection program, the fuels management program would place greater emphasis on the use of prescribed fire (to mimic the natural fire regime). Location of treatment sites would be less restrictive and could occur throughout the canyon.

Alternative 4

The fuels management program would place greater emphasis on the use of mechanical treatment because more motorized access would exist in this alternative. The emphasis would be to treat areas along roads and near recreation sites, although treatment sites could occur throughout the canyon. The BLM would partner with the Oregon Department of Forestry, Klamath County Sheriff Department, or Tribes to provide a joint-use guard station.

Land Tenure

Management Goal

- Adjustments are completed so that land ownership patterns or implemented management agreements are such that management throughout the planning area maintains and enhances resource values.

Summary of Issues

PacifiCorp is the major private landowner in the planning area. PacifiCorp has requested, in writing, that BLM explore the possibility of land tenure adjustments or long-term cooperative

management strategies during the development of this plan. PacifiCorp has submitted a map to the BLM that identifies parcels of their land to be considered for possible land trade, acquisition, or a mutually beneficial land management arrangement. PacifiCorp has stated that they are interested in acquiring public lands within the operational area of the Klamath Hydroelectric Project.

Public lands within the operational area of the Klamath Hydroelectric Project are identified for retention and management as part of the public lands, and are not available for disposal by sale, exchange, or any other method. PacifiCorp did not identify any other lands that they were interested in acquiring; therefore, we cannot evaluate the impacts that could result from their disposal in this document.

In order to address issues/resource concerns identified in this plan, the BLM would need to determine the resource values of the PacifiCorp lands pertaining to recreational use, access, prehistoric and historic sites, Native American traditional uses, and fish and wildlife on the lands they have identified.

This plan would also address issues surrounding the management role of the State of Oregon in private lands within the Oregon Scenic Waterway. There are management concerns surrounding how the federal government (in Oregon) can ensure adequate recreational access to the river if it does not administer the land. Oregon State Scenic Waterway administrative rules for the Klamath River would be developed and made part of the river plan.

Actions Common to All Alternatives

- The BLM would maintain existing rights-of-way and road use agreements.

- Management agreements would be developed with private landowners to maintain scenic river/ACEC values.

- Land tenure direction within the proposed project alternative boundaries will be to increase public land holdings by retaining public lands and acquiring nonfederal lands. The alternative boundaries change only in California.

- All land acquisitions would be through exchange, purchase, or donation. If possible, surface and mineral estates would be acquired. Acquisitions will be from willing sellers of available unimproved property. Lands that are acquired will be managed with the management direction of the Final River Plan. Acquisition of private lands would be actively pursued within the proposed alternative project area boundaries (project area boundaries vary only in California). It is possible that additional lands could be acquired outside the alternative project boundary, if so then the management objectives identified in the Final River Plan would apply to those lands. Acquired lands would be subject to mineral leasing with no surface occupancy. Acquired lands would be managed to maintain or enhance the designated and proposed ACEC in Oregon, the designated Upper Klamath River Wild and Scenic River in Oregon, and the portion of the Klamath River found to eligible and suitable for inclusion into the national wild and scenic river system in California (per the *Wild and Scenic Rivers Act)*. If lands with unique or fragile resource values were acquired, the BLM would protect those values until the next plan revision.

- Conservation easements may be acquired if they provide rights sufficient for the Bureau to protect and enhance the upper Klamath River's outstandingly remarkable values found on the private lands.

- In Oregon, the proposed ACEC boundary for river Segment 1 remains the same for Alternatives 2, 3, and 4. There are no differences between the alternatives for the

designated ACEC in river segment 2 (Oregon), nor are there differences in acreage of private lands.

- The boundary remains the same in all alternatives for the designated ACEC in river Segment 2 (Oregon).

Actions Specific to Each Alternative

(Refer to Map 3 and Table 4-16 and Appendix H)

Table 4-16. Land ownership by project area and alternative (acres)*

			Alternative 1		
	BLM	**USFS**	**PacifiCorp**	**Other private**	**State of Oregon**
Oregon	6,099	—	1,269	1,230	118
California	214	291	2,025	273	—
Total	6,313	291	3,294	1,503	118
Grand Total			**11,517**		
			Alternative 2		
	BLM	**USFS**	**PacifiCorp**	**Other private**	**State of Oregon**
Oregon	6,099	—	1,269	1,230	118
California	214	291	3,575	840	—
Total	6,313	291	4,844	2,070	118
Grand Total			**13,636**		
			Alternative 3		
	BLM	**USFS**	**PacifiCorp**	**Other private**	**State of Oregon**
Oregon	6,099	—	1,269	1,230	118
California	1,472	601	5,830	2,783	—
Total	7,571	601	7,099	4,013	118
Grand Total			**19,402**		
			Alternative 4		
	BLM	**USFS**	**PacifiCorp**	**Other private**	**State of Oregon**
Oregon	6,099	—	1,269	1,230	118
California	1,297	291	5,830	845	—
Total	7,396	291	7,099	2,075	118
Grand Total			**16,979**		

*Does not include 362 acres of surface water in planning area.

Alternative 1

Continue existing agreements with PacifiCorp for managing recreation uses in the canyon.

Alternative 2

Where opportunities exist, use land tenure adjustments to facilitate the management and protection of resource values. Any change in ownership would be to acquire lands with high values or facilitate management of values on existing public lands.

Alternative 3

Where opportunities exist, land tenure adjustments would be used to facilitate the management and protection of resource values. All land tenure adjustments (into public ownership/management) would facilitate managing the canyon area in a more historically natural condition. This alternative would maximize acquisition of lands with high values or that facilitate management of values on existing public lands.

Alternative 4

Where opportunities exist, land tenure adjustments would be used to facilitate the management and protection of resource values. Land tenure adjustments (into public ownership/management) would primarily be to enhance recreation opportunities, cultural resource management, and scenic values.

Land Use Allocations

Management Goal

- Implement changes in land allocations and management designations to facilitate more consistent management of resources.

Actions Common to All Alternatives

No actions are common to all alternatives.

Actions Specific to Each Alternative

(Refer to Maps 2, 14, 15, 16 and Appendix H)

Alternative 1

No land allocations or designations are proposed with this alternative.

Alternative 2

Expansion of the existing ACEC boundary to include planning area lands in Segment 1 is proposed. The boundary of this area is the same for Alternatives 2, 3 and 4, and can be seen on Map 2.

Expansion of the existing Upper Klamath River Management Area in river Segment 3 (Redding RMP p.23, 27, 35) to retain land and resources important to maintaining the existing resource values in the Suitable and Eligible section of the Upper Klamath River. The boundary of this area varies by alternative – the Alternative 2 boundary can be seen on Map 14.

Alternative 3

Expansion of the existing ACEC boundary to include planning area lands in Segment 1 is proposed. The boundary of this area is the same for Alternatives 2, 3 and 4, and can be seen on Map 2.

Expansion of the existing Upper Klamath River Management Area in river Segment 3 (Redding RMP p.23, 27, 35) to retain land and resources important to maintaining the existing resource values in the Suitable and Eligible section of the Upper Klamath River. The boundary of this area varies by alternative – the Alternative 3 boundary can be seen on Map 15.

Alternative 4

Expansion of the existing ACEC boundary to include planning area lands in Segment 1 is proposed. The boundary of this area is the same for Alternatives 2, 3 and 4, and can be seen on Map 2.

Expansion of the existing Upper Klamath River Management Area in river Segment 3 (Redding RMP p.23, 27, 35) to retain land and resources important to maintaining the existing resource values in the Suitable and Eligible section of the Upper Klamath River. The boundary of this area varies by alternative – the Alternative 4 boundary can be seen on Map 16.